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RHAZES

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CLINICAL · MEDICINE
AND · SURGERY

VOLUME 38 JULY, 1931 NUMBER 7

RHAZES

ALTHOUGH it seems probable that, but for the Arabians, the medical knowledge and culture of Greece and Rome—the works of Hippocrates and Galen—would have been lost to the world during the Dark Ages, even the greatest of these Persian carriers of the Hellenic torch—Ibn Sina (or Avicenna), Haly ben Abbas and Rhazes—were, for the most part, translators, imitators and commentators, rather than originators, though each of these three made some genuine contributions.

The birth dates of the great conquerors and commanders—slaughterers of multitudes—are well remembered in history; but it is little more than a reasonable guess when we set the natal year of one of the greatest among the healers of men, Abu Becr Mohammed Ibn Zacariya Ar-Razi (mercifully shortened to Rhazes) as 860 A.D., though it is known that he was born near Khorazan.

Rhazes did not, like some of the famous ones, begin his medical career in youth, but spent those joyous years in cultured idleness and the study of music, and took up his medical studies, under the Jewish physician, At-Tabari, when he was more than forty years old.

In those days, traveling was a part of the medical curriculum, so Rhazes traveled widely, learning much, and returning to Bagdad, secured the coveted appointment as director of the hospital there, in which post his clinical experience was so great and he used it so well that Garrison classifies him, with Hippocrates, Aretaeus and Sydenham, as one of the great original portrayers of disease. It must be remembered that, at the beginning of the tenth century, all the world came to Bagdad for a medical education and hung upon the words of "the Galen of the Arabians."

Rhazes was a deep and enthusiastic student of the Greek and Roman masters, translating and commenting upon their works, and adding suggestions from his own wide and varied experience. He wrote an immense, ill-arranged and undigested encyclopedia, intended to cover the whole field of medical knowledge, known as *El Hawi*, or "The Continent of Medicine." This was translated into Latin, by Ferragut, in 1279. Later, as a tribute to the Prince of Khorazan, he prepared an excellent summary of the "Continent," which, being dedicated to that ruler, is known as the "Work to Al-Mansur." This was the book that Vesalius translated, and it was used as a textbook in medical schools for more than five hundred years.

European students of Arabian medicine give Rhazes the credit of having written the first book on pediatrics; first described spina ventosa; and given a fuller account than any previously published of curvature of the spine and the principles of catheterization.

But the basis of his fame rests, not upon his massive "Continent," nor even upon his varied clinical presentations, but upon a small volume, giving the first clear-cut and vivid description (most of which is as valid today as it was more than a thousand years ago) of *smallpox* and *measles*, which had been observed and alluded to as early as the sixth century.

Rhazes lived to what was then the good old age of seventy-two years and died, poor, blind (from cataract) and neglected (because he had offended his prince by writing a book on alchemy, whose teachings he was unable to put into practice). He was ever a Galenist in theory, but a true follower of Hippocrates in the simplicity of his practice and seems to have been "the greatest physician of the age in which he lived."

Blessed is the man of science who enjoys the great companionship of the ancients.—Sudhoff.

A Real Advance in Pedagogics

THE science of teaching, as a real science, is still in its swaddling clothes. For centuries, pedagogics has been among the most reactionary of professions and little real, basic progress has been made, in this country at least, in the past hundred years. Individual institutions and teachers have, to be sure, experimented with new ideas here and there, but the fundamental features of the system have remained practically as they were at the close of the Civil War. In fact, leading educators admit that the general methods now in vogue have not been modified since universities were first established in America and realize that these methods are very far from meeting modern needs.

A couple of years ago the University of Chicago embarked upon an almost unprecedented experiment by choosing a keen and capable *youngster*, Robert Maynard Hutchins, as its president. This new wine, put into the old bottle, has been fermenting, and next autumn something is going to pop, out on the Midway.

Simultaneously or thereabouts, the authorities of Yale University saw gleams of light which convinced them that a human being is, not merely a set of more or less highly specialized and unrelated powers and abilities, but a coordinated organism, functioning as a unit. From this recognition originated the Institute of Human Relations, about which more information will appear in these pages presently. For the present it is enough to say that the Institute is already fostering a number of the features of the "Chicago Plan." Others, of which we have not heard, may be doing the same thing.

Very briefly, this revolution in pedagogics aims to make the system of instruction fit the student, instead of the archaic plan of hacking and hewing the student to fit the curriculum. It embodies a change from a system, built around "good" and "poor" students, to one based upon "fast" and "slow" students.

Under the old scheme, the student entered into a competitive game with the faculty. No matter what kind of a worker he was, he must spend a certain number of months in the university and accumulate a certain number of "credits" before he could receive his degree.

The professors as their part of the game, undertook to do their best, by means of daily roll calls and frequent "tests" and examinations, to see that the student was physically present at the class and possessed enough information or cleverness to answer their set questions with sufficient accuracy to receive a certain minimum rating.

On his side, the student undertook, by an astonishing variety of subterfuges, to outwit his instructors in every possible way and to obtain his minimum of "credits"

with an irreducible minimum of effort and interference with the real business of attendance at an institution of higher learning—that of making collegiate whoopee.

Of course there were outstanding exceptions to this rule, but the fact that it was decidedly general in its practical application is abundantly demonstrated by the abysmal ignorance of things of vital importance, shown by an appalling percentage of college graduates, except those of the technical schools, which have always enrolled considerable numbers of earnest young people with a real purpose in life.

The whole system was adjusted to fit the rate at which the least-interested and most poorly-prepared student could be *forced* to progress with his studies. Thus the superior students, in energy and ability, were held back and penalized.

The details of the reorganization of the University of Chicago will be of general interest only to those who are looking for a place where the education of young people can be effectively started, and can be obtained by writing to that institution. The general plan should be widely understood.

The new idea is to give the superior and the earnest student a premium on these qualities, by removing all or most of the restrictions which are required in the grade schools, knocking out the partitions between many of the departments, and saying to the seeker, "Here we have a vast opportunity for you to gain knowledge and culture in general and special lines. Come and take what you want for your purposes. We will do all we can to help you in making a wise choice.. Having chosen, proceed as fast or as slowly as your desires urge or your ability permits. When you think you have reached your goal, we will ascertain whether or not you are correct."

Under this system it is assumed that the university student is an adult human being with a purpose. Roll calls, formal "tests" and other measures fit for children are eliminated. The student himself is responsible to himself for his attendance at lectures and classes and for the method and amount of his studying. He can take vacations (or not), when, as and if he chooses. When he feels that he has a real knowledge of some subject, he announces that fact to the authorities and is given an inclusive and searching examination upon it. If he fails, he fails on two counts: his information was inadequate and his judgment was poor.

From a practical standpoint, an arrangement like this will permit an exceptionally capable young man or woman to finish, for example, the medical course of study in three, or even in two years, instead of the customary four. The opening of doors between departments will tend to develop better all-around, cultured human beings than have been produced under the old methods .

If this and similar experiments now in progress prove successful, all of our universities will have to adopt the plan, or the serious students will be concentrated in those which do so, while the others will be a refuge for the loafers and wasters and those who go to college in order to escape from the realities of life for four more years.

As a splendid palace, deserted by its inmates, looks a ruin, so does a man without character.—Mahatma Gandhi.

Premarital Education

SEX is by no means the only factor in the marriage of civilized people. In fact, if two persons of opposite sex are to remain in love, they must do far more than merely love each other—they must love many things and ideals together.

Marriage is, in fact, the great school of experience for rounding out the individualities of the two persons concerned, for broadening and deepening their emotional and mental perceptions and abilities and for developing that sense of unity which is essential to true spiritual progress.

It is, however, indisputably true that, so long as we are living in physical bodies, we

must have some means of physical expression to symbolize and perfect the union on the inner and, perhaps, higher planes of consciousness. This symbol is found in that most intimate of human relationships, the sex embrace.

We find, therefore, by logical reasoning and by direct observation, that sex is the catalyst, in the spiritual reaction between men and women, which stimulates the higher interactions and resolves possible conflicts. A marriage based upon sex alone has no further purpose than immediate physical satisfaction and procreation and, for reasonably civilized beings, cannot endure beyond the period of youth. A satisfying and mutually stimulating and emotionally and intellectually productive marriage, without sex, is impossible.

It is, therefore, highly important that young people, of both sexes, who are about to assume the relations of husband and wife, should receive adequate and explicit instruction, from some well-qualified person (preferably the family physician), as to the details of the technic which will render their sex life as perfect as possible; or, in case there is some physical incompatibility between them, that they be warned of this fact before it is too late.

In practically all important occupations, except marriage and parenthood (the most important of all!), it is now customary for those who are about to enter upon them to undergo a thorough physical examination, to determine their fitness for the duties they are undertaking, and to receive definite instructions regarding the best and most efficient manner of discharging those duties.

Physical examinations (sometimes decidedly perfunctory) are now required by some states, to determine the presence of reasons why a marriage should *not* take place; but so far, little or nothing seems to have been done in the way of suggesting, to a man or woman, the type of life-partner who would be particularly suitable.

Every physician who handles general or family practice should be qualified to give young people who contemplate marriage, not merely a physical examination to discover impediments to the union, but advice as to the best means for overcoming those impediments, if they are not insuperable. He should also be able to explain, in detail, the best methods for preventing or miminizing pain in coitus, to reassure the prospective bride and to instruct them both in regard to reliable means for the most desirable spacing of children. There is, today, no excuse for the physician who is not informed on these matters, because adequate books on erotology (the science and technic of the love life) are now readily available.

Nor is it sufficient to explain and advise regarding the purely physical factors of the sex life, though ignorance of these is deplorably widespread and breeds incalculable misery. The *true* and helpful premarital advisor must know that most marital maladjustments are psychic, rather than physical; he must be convinced that the exercise of the sex functions, under proper conditions, is a high and *beautiful* activity, and be able to impress that conviction upon the young people he instructs, so that the barriers of ignorance, prudery and false teaching will be broken down; and he must have some insight into the psychic problems they may encounter, so that he may forewarn the couple of them, and thus forearm them.

Certain parts of this instruction, such as that regarding methods of contraception, should be especially emphasized to the woman; and others, such as the technic of lovemaking (of which most men are woefully and disastrously ignorant) to the man. The talks should, at first, be given to each, separately; but after their inhibitions are sufficiently released to permit them to talk these things over with each other, a conference or two, with both of them together, will clear up many hazy points.

Such advice as this is valuable beyond price, and as it takes much time, both in preparation and in consultation, a reason-

able fee should be set upon it, for those who are able to pay; others, who sadly need it, should receive it on the same basis that other medical services are rendered to the financially embarrassed or incompetent.

The physician, in any community, who will prepare himself to perform this human service in the way it should be done (and this requires special abilities and much study) will find no lack of demand for such help as he can give and may even develop into a specialist along this line and be able to accomplish as much as or more in the relief of human misery than his colleagues who are engaged in curing men and women of physical diseases, which are often due to ignorance of nature's beneficient laws.

Fear not that thy life shall come to an end, but rather fear that it shall never have a beginning.—Cardinal Newman.

Free Medical Literature

THE standard medical textbooks (except the few that have a loose-leaf service feature) are always, necessarily, from one to ten years behind the minute, because it takes practically a year to get a book ready for the publisher, set the type and make the illustrations, read proof on it, index it, print it, bind it, advertise it and get it into the hands of the ultimate consumers—the physicians. After that, it is generally several years before another edition is called for, and with the passage of every year, the book becomes more and more out of date.

That's why all successful and forward-looking physicians subscribe to and *study* at least one, and generally several, good medical journals. And the more sincerely they study these journals and put what they learn into practice, the more successful they are, professionally and economically.

There are two parts to a medical journal, as well as to almost all other periodicals: the editorial section and the advertising section; and the man who does not study them *both* is missing a part of the value for which he has paid his money. The leading articles, abstracts, book reviews and other editorial matter will be studied, more or less carefully, as a matter of course; but the man who neglects the advertising pages is liable to overlook important new ideas.

The advertisers in any periodical of standing and importance are paying good money for the privilege of presenting their products to an intelligent and discriminating group of people, and it is well worth one's time to see what they have to say. Many of the offerings may be of no immediate interest to the greater part of the readers; but it is good to be aware of what is going on in the world, and one never knows when one will encounter an announcement which will prove to be immensely important.

The makers of high-grade drugs, instruments and appliances are spending hundreds of thousands of dollars every year to have their products painstakingly studied and tested, before they offer them for the use of that keen and canny group, the American medical men, and the results of these laboratory and clinical tests are an important part of the current literature of the profession.

The periodical advertising space is only a part of the promotion scheme of progressive manufacturers. Back of these show-windows, which attract the attention of the passerby, are the full shelves, in the form of circulars, reprints and other literature, reporting in detail the work which has been done by research students and clinicians, who are frequently men of national renown, and this truly valuable literature is available, without cost, to any physician who will take the time and make the effort to clip a coupon or write a letter and ask for it.

The fact that this information is prepared with the idea of creating a demand for some particular product does not detract from its value, for there are nowhere near enough independent, endowed laboratories in the country to cover the whole field, in these days of astonishing develop-

ments. The reports *have* to be sound and reliable, to meet the scrutiny of men who *know*. One must, of course, use discrimination and common sense, in order to discard the chaff.

In order to make the service we render to our readers as efficient and up-to-date as possible, we keep in our office a file in which is indexed all the literature offered by the important and reliable caterers to the medical profession (for we never — or very rarely — fail to clip the coupon, sign the card or write the letter) and are thus able to answer questions about products which are too new to be included in the dictionary or the textbooks.

To the man who desires to keep abreast of the times, at an insignificant expense, we suggest that he study his medical journals carefully, including the advertising pages; that, when he sees the announcement of a product in which he is, or conceivably may be, interested, he ask for the complete literature upon it; and that when this is received, he file it in an indexed case (these can be purchased as cheaply as a dollar or two), so that the information will be instantly available when needed.

Those who will carry out this plan, which costs so little money and takes so little time, will find that their medical journals are paying dividends as never before and that their professional and financial success is increasing steadily, in direct relation to the real use they make of the special periodicals they are receiving.

Who serves only himself is quickly forgotten.—Edit. *Collier's Weekly.*

Eugenics and Larithmics

WHEN we speak, broadly, of "the entire population of the United States," we refer, not merely to the numbers of people present within our borders, but to the quality and relationships of these people as well. The large word, population, has, however, been appropriated by the statisticians and applied merely to numerical factors. We seem to need a new word for the studies and findings of these people.

The qualitative aspects of population, which have come in for much study during the past decade or two, have been given words to express them—*eugenics*, when purely hereditary factors are considered, and *euthenics*, when we speak and write of human qualities as derived from or altered by culture.

Now comes Henry P. Fairchild* with a word for the strictly quantitative aspects of population "*Larithmics*"—derived from the Greek roots, λαος (people) and *αρίθμος* (number).

This word corresponds closely to the meaning of the concepts involved; is euphonious, easy to learn, pronounce and spell; and it has been cordially received by several workers in this special field, but its eventual success depends upon its adoption by those who have occasion to refer, by the written or spoken word, to the concept of which it is a symbol.

Like any other science, larithmics is divided into the "pure," or theoretical (how populations come to have a certain size at a certain time), and the practical or applied (what is the best size of a population for any accepted social objective and how to secure and maintain it at that figure).

We suggest that this word is worthy of incorporation into the language and that those who have occasion to discuss the numerical aspects of population will do well to use it when speaking or writing on the subject. If this is done, it will soon find a place in the dictionaries.

*See article in *Am. Journ. Sociology*, Sept., 1930.

LEADING · ARTICLES

The Present Status of Vaccine and Non-Specific Protein Therapy*

By John A. Kolmer, M.D., Philadelphia, Pa.

Professor of Pathology and Bacteriology in the Graduate School of Medicine of the University of Pennsylvania; Professor of Immunology and Chemotherapy in Temple University

VACCINES have proven of definite value in the prevention of certain diseases, but their value in treatment has been frequently questioned.

The psychologic attitude of the physician and patient has some bearing upon the results of therapeutic immunization; however, there must be something of real merit in vaccine therapy to have had it survive all the abuses committed in its name during the past twenty-five years.

The effects of vaccines are both specific and non-specific. Specific effects refer to the production of antibodies and are almost alone responsible for the prophylactic value of active immunization. Microorganisms vary greatly in their vaccinogenic activity.

Non-specific effects refer to the production of fever, leukocytosis, an increase of the non-specific bactericidal substances of the blood and the promotion of phagocytosis, and probably play some part in therapeutic immunization.

Preparation of Vaccines

Methods of preparing vaccines are of considerable importance. In general terms, vaccines of living bacteria of reduced virulence are most vaccinogenic, but of limited application.

The soluble exogenous toxins and products of pathogenic bacteria are highly vaccinogenic and should always be included whenever possible.

Vaccines sterilized by phenol, tricresol or other chemical agents are more vaccinogenic than heat-killed vaccines.

Vaccines of the soluble toxins of staphylococci and streptococci are especially desirable. These may be prepared by cultivating the organisms in suitable broth media for 5 days. The broth culture should then be passed through a Berkefeld filter and the sterile filtrate employed as a vaccine; or tricresol, to a concentration of 0.5 percent, may be added to the unfiltered culture, followed by incubation at 37°C. for 24 hours, and employed as a vaccine after proper dilution, if found sterile upon subculturing; or chemically killed organisms may be added to a sterile filtrate in the desired concentration.

Accurate bacteriologic examination is requisite in the preparation of autogenous vaccines. No matter how carefully a vaccine is prepared, it cannot be expected to give specific results if the primary organisms of importance are lacking. The very purpose of vaccine treatment may be defeated at the outset by poor or indifferent bacteriologic technic.

As a general rule, autogenous vaccines are to be preferred to stock vaccines in the treatment of disease, because of the occurrence of immunologic specific strains of pneumococci, streptococci, staphylococci, gonococci and possibly other pathogenic bacteria, and because of the freshness of autogenous vaccines and the presence of toxins before deterioration occurs by age and by keeping at room temperature.

Administration of Vaccines

The route of administration of vaccines has an important bearing upon their prophylactic and curative activities.

The skin is an important organ of antibody production, and **intracutaneous injec-**

*Author's abstract of a paper read before the South Carolina Medical Association, May 6, 1931.

tions are probably to be preferred to the use of the subcutaneous route.

As antibody production apparently occurs in the infected tissues, it is likely that the local applications of vaccines, and especially Besredka's "antivirus," may possess therapeutic possibilities.

The local application of vaccines may also bring the bacteriophage into play, but the possibility of local antibody production appears to be the more important mechanism.

For non-specific effects from bacterial protein, the intravenous route is to be preferred.

Not all pathogenic bacteria in the form of vaccines are capable of engendering immunity.

Vaccines have proven of great value in the prevention of smallpox, rabies, diphtheria and typhoid-paratyphoid fevers.

Some success has attended vaccination against scarlet fever, pertussis, cholera, plague, bacillary dysentery, pneumonia, meningitis and the common cold.

The Common Cold and Acute Infections

The common cold is a disease of great direct economic importance, and is also important from the standpoint of predisposing to paranasal sinus infections, pneumonia and tuberculosis.

It is probably due primarily to a *virus*, which may reduce resistance to secondary organisms, like streptococci, pneumococci, staphylococci, *M. catarrhalis*, *B. influenzae* and *B. friedlander*.

Stock and autogenous vaccines possess prophylactic value in about 50 percent of the cases. Best results have been observed with mixed stock and autogenous vaccines, four to six doses being given at 3 to 5 day intervals.

Vaccines are not necessarily contraindicated in such acute systemic infections as surgical septicemia, pneumonia, typhoid fever, etc. Small doses do not add appreciably to the toxemia.

Small doses, at close intervals, are indicated, however, when vaccines are employed, to avoid over-stimulation of the immunizing capacity of the patient.

As antibody production may occur principally in the infected tissues, it is likely that the intracutaneous or subcutaneous injection of small doses may stimulate the antibody-producing capacity of the skin and other tissues.

The intravenous injection of small doses is sometimes advisable, for non-specific effects.

The vaccine treatment of acute localized infections is permissible and advisable.

Chronic Infections

The vaccine treatment of chronic infections has been the usual field of application, on the basis of stimulating antibody production.

Infections of bone are usually refractory and likely to yield unsatisfactory results.

The vaccine treatment of infections of the soft tissues is usually more satisfactory, and especially those due to staphylococci and streptococci, like furunculosis, asthma due to bacterial sensitization, etc.

The vaccine therapy of focal infections is deserving of wider application.

Removal or drainage of primary foci may be without therapeutic effect, if the secondary foci are well established.

Extracted teeth and enucleated tonsils should be carefully cultured and autogenous vaccines administered as part of the therapeutic program, in the treatment of recurring iritis, chronic infective arthritis, neuritis, myositis, etc.

Non-Specific Proteins

Non-specific protein therapy is still largely upon an empiric basis. The mechanism is unknown, but the production of fever, along with quantitative and qualitative changes in the leukocytes, with an increase of non-specific bactericidal substances of the blood and of phagocytosis and focal reactions of hyperemia and exudation, are regarded as being of most importance.

Many agents have been employed, especially typhoid and other vaccines, intravenously, and sterilized milk or milk proteins intramuscularly.

Severe constitutional reactions from intravenous injections are dangerous in chronic myocarditis, and especially in syphilis.

Especially good results from non-specific protein therapy have been observed in some cases of chronic recurring iritis, chronic gonococcus infections, infective arthritis, recurring erysipelas, neurosyphilis, etc. It has also been employed with success in the treatment of some acute infections, like, pneumonia, typhoid fever, septicemia, etc.

2101 Pine Street.

A New Educational Pattern

By M. C. Winternitz, M.D., New Haven, Conn.
Dean of the Yale University School of Medicine

AN IMPARTIAL critic of Medicine today sees a paradoxical situation. Viewing one narrow sector of the field after another, he notes tremendous progress. Specific knowledge of the human organism and of many disease processes has been vastly increased and methods of dealing with human ailments have been improved. In comparison with the well-trained specialist today, the product of our medical schools a generation ago lacked exact knowledge. The importance of our scientific progress, made possible by application of precise methods and intensification of interest, can scarcely be overestimated.

The Institute of Human Relations Building, Yale University.

When the critic abandons the microscope with which he is viewing the field of medicine and looks upon life today as a whole, to discover what effects upon it Medicine has had and is having, he sees another picture. Instead of a world healthier and happier than that of a generation ago, he finds one in which mental and nervous diseases are more general, poverty and unemployment are still unsolved problems, crime flourishes as never before, divorce is more common, and life generally is less secure and well-rounded. Although mortality has been cut down in certain diseases and certain communities, there has been an apparent increase in other diseases. In short, Medicine as a social science, devoted to promotion of human welfare, must still be considered in its infancy.

But in taking such a view the critic must also note that the shortcomings or failures of Medicine are likewise those of other social sciences. What can be claimed in terms of human happiness, broadly viewed, for such applied social sciences as law, engineering, industry, and government? What can we say that religion, as a profession, is doing for the world today? Each of these fields, just as Medicine, when viewed separately and microscopically, may be considered dynamic and promising, but taken in relation to life as a whole, all are obviously disappointing.

It may be that in our concentration upon narrow fields of knowledge we have missed an important truth, namely that a human being is not merely a physical, a mental or a social organism. He is all of these, and unless the specialist takes this fact into consideration he is certain to fall into practices which are harmful, because predicated upon a false assumption.

The Institute of Human Relations

The Institute of Human Relations at Yale University grew out of a belief that, necessary as specialization is and will continue to be in every scientific field, a point of development has now been reached where training in any field must be based upon an understanding of human life as a whole; i.e., upon the fundamentals of biology, sociology and psychology. Through the Institute, a new educational pattern is being established—a pattern that applies as much to training in law, engineering, religion and government as it does to Medicine. It is the function of the Institute to foster the viewpoint that no field, fundamental or applied, is by itself complete, but that each is simply one of the approaches to an understanding of human life, which has many facets; further, that in any field it is essential to see life as a whole, in order that this field may be made to play its proper role. There is, for example, no point in dealing with a cardiac condition solely as a problem of the physical organism, unless there is also recognition of environmental, economic and psychologic aspects of the disease.

It may be asked, how can the Institute of Human Relations affect the pattern of edu-

cation? It is not a separate school or department of Yale University. It has no faculty exclusively its own and no funds of its own. All members of the staff are appointed to fundamental departments of the University and all budgets are controlled by these departments. But a building has been erected which provides facilities for research and for clinical activities in biologic and sociologic fields. It brings into physical contiguity and informal daily contact those who are concerned with problems of human life and welfare. There is no enforced cooperation, but as occasion and opportunity arise, specialists in different fields come together in the study of certain problems.

Thus far, among problems which are being approached conjointly are juvenile delinquency, child development, business failures, unemployment and the human aspects of the use of labor-saving machinery and methods in industry. At the same time, of course, specialists in the fundamental and applied fields of sociology and biology are continuing the pursuit of their particular interests as they have always done. But they cannot escape a certain consciousness of the fact that their specialty is not an entity, but merely one of the means by which an understanding of human life may be approached; a consciousness, too, that there are at hand resources of knowledge and personnel in related fields, with the aid of which they may expect to progress further toward the desired end than would be possible if each specialist were off in a corner by himself, in accordance with usual university procedure.

Although certain specific results may naturally be expected from the research activities of the Institute, of more importance is the point of view which it fosters and which must gradually permeate to all professional fields through the influence of the representatives of those fields who are members of the Institute staff. This point of view had already had an important effect upon medical education at Yale, even before the Institute became a reality

Enrolment in the Yale University School of Medicine is limited to fifty a year. Students are selected on the basis, not only of scholarship, but of personality, intelligence, and achievement in any direction. The curriculum is elastic, so that a student may take up work which he is equipped to do, whether or not he selects courses in the usual order. The point is that, during the first two years, he must gain command of the fundamentals in biology. Attendance records and periodic examinations in each course have been eliminated. The student is on his own.

At the end of two years, or thereabouts, he comes up on his own volition for examination, not before those from whom he has been receiving instruction, but before a group representing the clinical section of the School. This group endeavors to find out if the student has mastered the basic facts and methods, to an extent that he can profit from instruction in the clinical division. The student's second examination comes at the end of the fourth year, or thereabouts, for the purpose of determining whether or not he has earned an M.D. degree. This is quite different from the customary regimentation and collection of credits, semester after semester. The student must learn to work things out for himself, to grasp principles and methods rather than to accumulate a great body of facts which he may or may not use.

The courses have been so condensed that the average student can do the required work in one-half of his time. The rest of his time he may devote to further study of the fundamentals or he may follow a particular interest. There are over one hundred special courses offered at the present time from which he may choose. Above all, the student has time for the development of interests outside of books and laboratory.

A plan is now being formulated to introduce into the medical curriculum, during the first two years, sociologic study which will be practical in the sense that actual individuals and families will be studied, but at the same time the fundamentals of sociology will be brought out. Already the study of the mind of man has been made an integral part of the curriculum in the Yale School of Medicine, through the organization of the department of psychiatry and mental hygiene.

In the future it should be impossible for the student to complete his course of training without being fully aware that there are many factors bearing upon human wellbeing and that none of these can be completely disassociated from others. The student will develop into no less a specialist than is the practitioner of today, but he will have more freedom in the

choice of his specialty; he may be crammed with less detailed knowledge than is customary today, but he will have had more experience in the application of fundamental principles and he should have a greater appreciation of the necessity of cooperating with other specialists in meeting problems of human welfare.

The Electrocoagulation of Tonsils

By G. F. Zerzan, M.D., Holyrood, Kans.

IT HAS been interesting to note the evolution of tonsil surgery, dating back to 1900, when we used the tonsillotome; then later, dissection and snare, followed by the Sluder operation, Meding enucleator, suction tubes and other types of tonsil instruments. Now electrocoagulation claims recognition.

The most universally employed method is, undoubtedly, dissection and snare. In St. Louis, the Sluder operation is proclaimed the leader. Crow, of Johns Hopkins, does a dissection, followed with sutures. All of his patients are given a general anesthetic; in other words, it is a major operation and should be so considered.

The object of this paper is, not to present extravagant claims or to consider electrocoagulation as a 100-percent method of tonsil removal. The general recognition given it, especially in the cases where surgical tonsillectomy is contraindicated or refused, affords a fairly large field for electrocoagulation.

The treatment has not been standardized. There is still much to do before the high-frequency currents used in this work are standardized. However, research workers are devoting considerable time and effort along these lines.

As to the method of choice, between Tesla desiccation and d'Arsonval coagulation, authorities differ. The type of tonsil should help make the decision. The Tesla current is more easily controlled, is less penetrating and less concentrated then the d'Arsonval. The Telsa desiccation would ordinarily be indicated in the small and submerged type of tonsil, and the d'Arsonval coagulation in the large or hypertrophied type.

To insure the best results, the high-frequency machine must be kept in first-class condition at all times, with frequent attention to the spark gap, connections, the best methods of insulation, etc. The frequency of a 60-cycle current must be raised to a frequency of 10,000 per second, to make it safe to handle. The frequency of a modern machine is several millions per second.

My experience consists of treating 300 tonsil cases by electrocoagulation, during the period from 1922 to 1930. Most of these were treated in the past five years. Only a few children, at ages from twelve to fourteen years, mostly referred cases, were treated by this method, on account of contraindications to surgical tonsillectomy.

Technic

As to technic, nothing new is presented. In the nervous type patient, two 30-grain (2 Gm.) doses of sodium bromide are given, at four-hour intervals, or Amytal may be used.* Topical applications of a 10-percent solution of cocaine, about three in number, at intervals of a few minutes, suffice for anesthesia; or Butyn, a 2-percent solution, or Anesthesin may be used instead.

Before beginning the work, the machine is "shorted" at about 3,000 to 3,500 milliamperes, which, with the patient interposed in the circuit, equals about 500 m.a. This may vary with the type of machine. The autocondensation handle is placed in the patient's hands and connected to one terminal of the d'Arsonval current, and the needle electrode to the other.

A curved-point, wire needle electrode is inserted into the tonsil to a depth of perhaps ¼ inch, making from six to ten insertions to each tonsil. The appearance of the tissue indicates whether the dose is sufficient. A metal tongue depressor is used; but a rubber pillar retractor for the pillars. The number of treatments varies from two to six, averaging three.

*Nembutal, in doses of 1½ to 3 grain (0.1 to 0.2 Gm.) works well.—Ed.

Postoperative Care: The throat, usually, does not become very sore, but occasionally pain and edema may cause considerable distress. In these cases, use an ice pack around the throat, ice by mouth and Dobell's or magnesium sulphate solution as a gargle. Immediately after treatment, a 10-percent solution of iodine in glycerine is used as a swab. Calcidin and Anesthesin troches are given every two hours, to be dissolved in the mouth.

The *advantages* claimed for this method are: The operation is practically painless, bloodless, and no hospitalization is necessary. The chief *disadvantage* is the fact that several treatments are usually required, making it inconvenient for patients from a distance; but it is surprising how far they will come to avoid surgical tonsillectomy. In the tonsil that has undergone peritonsillar abscess formation, it is more difficult to obtain a good result, on account of the resultant adhesions.

A patient who has had one or more treatments, and finds his symptoms improved, may consider himself recovered and fail to complete the course of treatment, but later has trouble. He is instructed to return at two-week intervals until discharged. The percentage of patients not completing their treatments is very small.

Case Reports

Case 1: A girl of 19, who always had infected tonsils, contracted diphtheria in 1929 (spring) and made a good recovery, with the exception of neuritis involving the lower extremities—no paralysis, but, on walking, she suffered much pain and was not able to walk up a flight of stairs. Two weeks after the first treatment, she had recovered the use of her legs and has been well ever since she completed her treatments.

Case 2: A man of 78 suffered with chronic arthritis and was confined to his bed for several months. This man had focal infection of his teeth and tonsils, also a high blood pressure, mitral stenosis, prostatitis, etc. The nose and throat specialist refused to do a tonsillectomy and he was referred to me. Certainly, no one would expect to obtain results in a case of this kind; but his teeth were extracted, his tonsils coagulated, and other dietary and medical treatment was prescribed. The patient, three years since this work was done, is reasonably well.

Case 3: A woman, age 54, suffered a paralytic stroke, due to an embolism, and has auricular fibrillation. Her infected tonsils were coagulated and she is being digitalized. Her condition is improved.

While electrocoagulation is described as a bloodless operation, I have had three cases of hemorrhage postoperatively: One case two weeks after treatment, another one week, the third, the next day. The first two cases had a surgical removal a year previously, but portions of the tonsils remained. These were desiccated and hemorrhage followed, but was not alarming in any case.

The statistics for electrocoagulation are, as yet, in the formative stage, but reports from Clark, Plank, Dillinger, M'Fee and Waring are certainly encouraging. The physicians of France have employed this method for twenty years and those of England also, for some time.

In the *Journal of the A. M. A.*, for Jan. 18, 1930, appears the following, from the *British Medical Journal*: "M'Kenzie is convinced that diathermy coagulation will come to be the method of choice for removing tonsils in adults. It is unsuitable for children."

As to surgical tonsillectomy, in the *Journal of the A. M. A.*, for October 20, 1928, appears an article by Drs. Paul S. Rhoads, and George F. Dick, on the efficacy of tonsillectomy for the removal of focal infection. I quote their comments:

"The most frequent object in removing tonsils is to rid the body of tissue harboring bacteria capable of producing disease in other parts of the body. Yet it is shown that tonsillectomy as usually done, even in the hands of specialists of established reputation, fails to accomplish this end in 73 percent of cases, because of incomplete removal of infected tonsillar tissue. There is even some indication that, in many instances, the condition resulting from incomplete tonsillectomy is worse than that existing before operation."

Conclusions

It is generally agreed that electrocoagulation is the method of choice, if surgical tonsillectomy is contraindicated or refused. This being the case, the field is a large one.

The standardization of technic will eventually be accomplished.

Following surgical tonsillectomy, if tonsillar tissue is retained, desiccation is the method of choice.

It will take some time to place electrocoagulation on a proper status, and to overcome the prejudice at present existing.

The "Stomatologic Program" and Autonomous Plans for Dental Education

By King S. Perry, D.D.S., F.A.S.S., Jeannette, Pa.
President, American Society of Stomatologists

THE medical profession is, apparently, not sufficiently familiar with the efforts of a group of dental practitioners who, since 1923, have worked for the establishment of Dentistry as a medical specialty. Medical men, here and there, have shared the view that Dentistry belongs to the family of specialities in Medicine. Of all medical writers who have attempted to crystallize the situation that exists between the two camps in dentistry, the stomatologists and autonomists, with the hope of bringing order out of chaos, Dr. Lake has accomplished this task most successfully, in his editorial "Dentistry at the Crossroads," in the June, 1929, issue of CLINICAL MEDICINE AND SURGERY.

Having watched the progressive changes that have taken place in Dentistry in the past forty-six years, and having observed closely the stomatologic movement in America since its rise in 1923, I must say that Dr. Lake's editorial is a contribution of great moment to Medicine and Dentistry. I believe that, if we carry on our future discussions on this subject along the lines indicated there, and do away with sophistry or verbalism, we shall go a long way toward finding a solution to a problem that is baffling dentists, dental and medical deans, presidents of universities and some of our philanthropists. It is the first time that the broad problem of dental education is being considered a serious business.

Of the discussions that have followed since, in these pages, Dr. Winternitz's article merits the most serious treatment.* In the first instance, it expresses a view of a medical educator; second, it opens up an avenue of thinking, of grave consequence to the future of dentistry.

To fairly estimate Dr. Winternitz's proposal, we must take account of the present programs of the stomatologists and the autonomists in America. It will therefore be necessary: (1) to present the essential features of the "stomatologic program," advocated by the American Society of Stomatologists; (2) to clarify the views of those in the dental profession who defend "dental autonomy," or the continuation of dental practice and dental education as "systems," separate and distinct from Medicine and medical education; (3) to analyze the essential features of Dr. Winternitz's proposal and see into which of the two programs it may *logically* and *practically* be placed.

The dental educational problem has had two factors; pedagogic and political. The pedagogic factor has unfortunately been neglected, for obvious reasons. No wonder, then, that confusion still prevails in dental education. The historical, professional and political phases in the evolution of dental education in the United States, that have a direct bearing on the facts which show dentistry to be at the crossroads, were dealt with by Dr. Alfred J. Asgis, in the educational report of the American Society of Stomatologists for 1929, published in the *Journal of Dental Research*, August, 1929.

THE STOMATOLOGISTS' PROGRAM

No argument is needed *to prove* that stomatology is a medical specialty; but much argumentation is necessary to convince one that Dentistry is a branch of the medical profession. We think, today, in terms of the mouth as part of the body as a whole, and not of the tooth as an isolated organ; and, from the standpoint of actual practice, we consider *every operation in the human mouth* as constituting dental practice.

Specifically stated, we believe that the concepts of pathology, bacteriology, therapy, etc., applied to the mouth, are particularized concepts that rest on scientific medicine. Stomatologic diagnosis derives its real practical value, for the patient, when the health of the body as a whole is taken into consideration when judging oral conditions. How can we conceive of a scientific diagnosis, unless we accept the idea that oral pathology is but an integral division of general pathology?

The stomatologist recognizes three modes of therapy, applicable to oral disease: *med-*

*CLINICAL MEDICINE AND SURGERY, August, 1930.

ical, surgical and *reconstructive*. Tooth extraction is *surgical* therapy; the treatment of Vincent's infection is an illustration of *medical* therapy; the making of a bridge or a plate is *reconstructive* therapy. No other person except a medically trained dental surgeon, or stomatologist, should be permitted to engage in any form of oral therapy. Of course, for extra-oral "technical" work, the laboratory technician, and not the dentist, should be employed. As a matter of fact, there are at present approximately 10,000 such laboratory technicians, assisting the approximately 80,000 dental practitioners.

We advocate, for the future, a better, more scientific system of education for dentists, and one less wasteful of the time and money of the student and the public. The dentist should be required to have the full medical qualification before he enters upon the study of his specialty. Such a course of training would be of five *professional* years; three years in the medical school and two years in the dental school.

The Autonomists' Program

As the most outstanding spokesman in defense of the autonomous doctrine for the past thirty years, we may acknowledge the *Dental Cosmos*, edited, until quite recently, by Dr. Edward C. Kirk, vice-president of the S. S. White Dental Manufacturing Co. In that journal appeared:

"From the very inception of dentistry as a specialty of the healing art, separate from medicine, one of the uppermost objectives in the mind of dentists has been to compel the medical profession to recognize dental practice as a branch of medicine . . . one of the most important organs of the body might not be neglected as a factor in general bodily health. . . ."

Discussing "Dental Autonomy," the present editor of the *Cosmos* calls attention to the cardinal principles of the doctrine, in October, 1930:

". . . We are firm in the belief that the dental graduate, at the end of his educational preparation, is far and away better prepared to practice his specialty intelligently than is the graduate of any other socalled specialty of medicine. . . . The dental student now receives the so-called medical fundamental subjects and his medical foundation now includes all that dental educators believe to be essential for his specialty."

A less vague and more precise statement than the above is made by Dr. C. N. Johnson, in his October editorial in the *Journal of the American Dental Association*:

"Certain individuals or groups in our profession have, from time to time, advanced the idea that we should no longer exist as a separate calling, but that we should sink our identity and become a specialty of medicine."

An equally essential feature of the autonomous program is *specialization in dentistry itself*, Dr. Johnson points out:

"Dentistry has developed specialties in its own field that are outstanding in their service, and it is absurd to try, at this advanced stage of its growth, to submerge its entire fabric in another calling."

As at present constituted, dental practice is divided among *dental* specialists such as: prosthodontists, radiodontists, exodontists, orthodontists, oral surgeons, pedodontists, preventive dentists (dental hygienists), occlusodontists, cariodontists, etc., etc.

Of the autonomous plans advanced, three are of immediate interest. Their differences lie chiefly in the number of degrees the student receives upon graduation from a dental school operating under a given plan; but all qualify for a license. The students are to receive preliminary and professional training in from four to six years after leaving high school, with the difference that the latter graduates receive the B.S. and M.S. degrees, in addition to the D.D.S. degree.

The "Columbia Plan"

There has been considerable misunderstanding about a plan recently proposed by Dr. Alfred Owre, dean of the Dental School of Columbia University, which supposedly aimed at the establishment of dentistry as a medical specialty. In his report for June 30, 1930, Dr. Owre presents more (but still insufficient) information about the proposal, which apparently comprises three plans: (1) the retention of the autonomists system, with its feature of dental specialists; (2) the adoption of the educational plan advocated by the American Society of Stomatologists; and (3) a compromise or modification, in some respects, of the "California Plan," proposed in 1925 by Dr. Guy S. Millberry, dean of the Dental School, University of California. According to Dean Owre, it would appear practical to establish, in the United States, a *dual dental educational system*, somewhat on the order of a dual German system of "Doctors of Dentistry" and "Technicians of Dentistry."*

*For a more detailed analysis of the various dental plans, the reader is referred to a paper, "Stomatology and the Dental Profession," published in the *American Dental Surgeon*, March, April and May, 1926, and also the series on "The Fundamentals of Stomatology," now featured by Dr. George M. Budlong, Editor, in his *Bulletin of the Florida State Dental Society*.

Dean Winternitz's view on dental education, as presented in CLINICAL MEDICINE AND SURGERY, has been discussed in the *Dental Cosmos*, in October, 1930. The dental profession is, therefore, vitally interested in what medical educators think about reform in dentistry. Dentists want to know what is, essentially, Dean Winternitz's proposal.

The first impression one gains from reading "Medical and Dental Education" is that Dr. Winternitz is opposed to the present autonomous system.

> "We have lived nearly a hundred years in the most perfect example of an absurd condition that could possibly be conceived of; namely, that Dentistry should be an entity, separated from Medicine."

He advocates, in substance, an educational plan identical with the one proposed by the stomatologists.

> ". . . If we fulfill the wish that has been expressed so often by the best representatives of the dental profession, that Dentistry will become a portion of Medicine, coordinated with every other specialty; that the dentist of a generation or two hence will have as broad a knowledge of man as a whole, as has the ophthalmologist, the orthopedist or any other specialist of Medicine."

Does Dr. Winternitz's proposal differ in some essentials from the stomatologist's plan? The following statement presents another, rather serious, phase of his proposal, that appears to befog the meaning of his major thesis:

> ". . . There will develop, perhaps at the same time, different groups on *different levels, with different educational requirements,* who will assist the dentist from the mechanical standpoint wherever special attention to the teeth is required" (Italics not in original).

It is not sufficient to say that dentistry should be a medical specialty and let it rest at that. The vital question is, how does a given plan work out? As pointed out, the "California Plan" (1925) and the "Columbia Plan" (1930) rest on the principle of educational requirements on varying levels. The former plan was discussed in the *Dental Cosmos* (May, 1925), and in the *International Journal of Orthodontia* (May, 1925).

There is another aspect which Dr. Winternitz brought to our attention:

> "Medicine is, in the last analysis, a social science. . . . There are serious difficulties in the relationship between Dentistry and Medicine, from the standpoint of education, of economics and of social setting."

If Dr. Winternitz proposes to retain the unity of the dental profession and have the future dentist better medically trained—a *medical* specialist—with a corps of assistants, for the sake of economy, then we may say that the technician and other assistants *are here.* There are, in the United States, approximately 10,000 laboratory technicians. The problem then is not one of creating assistants, but of readjusting the dental curriculum and turning the dental school into a graduate school for dentistry.

If Dr. Winternitz's proposal means, by implication, the training of laboratory technicians, *independently* of the training of dentists as medical specialists in stomatology, are we not creating a new and more complex problem? Have not the dental profession of the State of New York and the Department of Education proved, by the repeal, in 1930, of the "Master Dental Technician" law, that licensing mechanics is against the best policy? Let us assume that the licensed, independent technician is created; What about our "social setting," in which we shall have *two dental professions* in America, with all the social nuisances that accompany such arrangements, now observed in Germany and other European countries that have followed such paths?

This question assumes greater proportions when we consider that approximately 80,000 practitioners in the United States are occupied only half the time. This means that about 40,000 dental practitioners are ready to render a service to the public, for which there is no demand. The dental profession, like any other group, has its progressive members who are forging ahead and ready and willing to bring about improvement.

What has been said is sufficient to indicate that a change of the present status of dentistry calls for a combined, cooperative effort; but dental and medical educators alone cannot bring about desirable reforms. The "vested interests" are in the way of progress. The support of the rank and file of dental practitioners is needed, and they are ready to lend assistance.

I must take exception to the statement that there are no dentists or physicians today, qualified for medico-dental cooperation. There may not be enough of them, but cooperation between physician and dentist is, today, certainly an established fact. Improvement in medico-dental cooperation may not be brought about by licensing technicians or by increasing the crop of "spe-

cialists" in dentistry. To serve the average man—the middle class—we must "train up to" the desirable level the present group of dental practitioners and physicians, by providing facilities for postgraduate instruction, and see that, in the future, only high-class men are admitted to dental practice.

There is chaos in dental practice and dental education. Only in a rational, common-sense and progressive attitude of all parties concerned, lies the hope for a solution of this broad social problem.

Immunity in Acute and in Chronic Diseases

By John Ritter, M.D., Miama, Fla.

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WHEN a supposedly healthy individual has sickened from some acute infectious disorder like scarlet fever, smallpox, etc., and has successfully overcome this attack, we reason that his body tissues have acquired a new function, which the body did not possess previous to the attack, and that now he is protected against a subsequent attack of this same disease — is immune. That, as an axiom, is now generally conceded by the medical profession.

From our present knowledge concerning immunity we now recognize two forms: an acquired and an inherited. We speak of acquired immunity when a person who has recovered from some acute disease is incapable of becoming diseased when again exposed to the same virus; and of inherited immunity when an individual, after repeated exposures to some acute disease, does not contract the disorder. The former is often referred to as "artificial," while to the latter we give the name, "natural immunity".

Inhibitive substances to the development of an acute disorder, either the acquired or the inherited, which are supposed to be circulating freely in the body fluids of the immune individual, particularly in the lymph, are generally spoken of as defense bodies, antibodies, lysins, amboceptors, inhibitive bodies, reactive bodies, immunizing agencies, or simply as immune bodies; and these bodies vary greatly as to their power of giving immunity to the organism in which they are present.

In the acute diseases, the length and duration of this immune property, on the one hand, may occasionally be very short and limited, and the organism, after a certain time, if again exposed to the same virus, may suffer a second, though much milder, attack; while on the other hand (and this in the greater number of instances), this acquired immunity may be so lasting, so permanent, that the first attack successfully protects the organisms against all subsequent attacks.

Immunity usually cannot be transmitted to others, and if so, perhaps only in a very mild degree. The child born to parents who have recovered from either an acute or chronic disease may inherit a very slight immunity, but is still liable to contract the disease if exposed to the virus. For example, a child born to parents who have recovered from a most virulent type of smallpox is very prone to contract the disease and may require vaccination to guard it against an attack; but not so the parents. We reason from this that immune bodies or immunizing agencies are constantly and permanently circulating through the blood plasma and the lymph of the mother who has recovered from such an attack, which will protect her but which are incapable of protecting or effecting the newly born child. Why have not these immune bodies, circulating in the mother's lymph, passed into the living organism of the infant in utero with the nutritive albuminous elements in the mother's blood? From a practical standpoint we may say that immunity begins at or in the placenta.

Physiology of the Placenta

A woman about to become a mother is suffering from lymphatic leukemia and has an enormously high white cell count (over 100,000 or more lymphocytes), yet the newly-born baby is healthy; its white cell count will be found normal; the increase of white cells in the mother's blood has not passed into the fetal organism. If we make a careful study of the placenta, we will observe that the fetus does not receive its blood directly from the mother, but that the

chorionic villi in the placenta, floating in the placental sinuses, act as barriers, allowing only certain fluids and albuminous material to pass, by a process of endosmosis or absorption, and that neither white nor red blood cells nor complex albuminous bodies circulating in the mother's blood stream can pass this barrier, hence immune bodies, which may be likened to more or less complex molecular groups, also do not pass this barrier, and in consequence cannot give immunity to the child in utero.

The normal and healthy, complex placental mechanism is more than a filter. Its vessels convey to the fetus albumen, salt and water from the maternal blood, allowing only such material to pass as is entirely free from all foreign admixtures; hence immune bodies circulating as protective elements in the maternal fluids can not be transmitted to the unborn child. Many experimental attempts have been made to introduce substances, in minute subdivision (not in solution), like vermilion, india ink, etc., into the fetus in utero, by injecting these substances intravenously into the mother, but all such experiments have been negative. Even the introduction of pathogenic bacteria, like anthrax, typhus, etc., from the circulation of the mother into that of the fetus in utero, is debatable.

As, from the maternal blood, the elements necessary to produce in the fetal organism the red and white corpuscles, are transmitted through the chorionic villi of the placenta, but not the corpuscles themselves, so we may reason that small particles of immunizing elements may similarly pass into the fetal organism, but not the immune bodies as a whole. Perhaps the molecular arrangement of immune bodies is equal in size to either that of the red or white blood corpuscles and, like these, they are incapable of passing the placental barrier; but some most minute particles or elemental bodies of these immune molecules are permitted to pass and, in that way, assure to the infant in utero a partial immunity.

Although the child born to a mother who has successfully passed an attack of acute infectious disease and in whose blood current the produced immune bodies are freely circulating is incapable of giving them to her offspring in the degree to which she herself possesses them, nevertheless, the infant inherits from its mother a small amount of immunity — just sufficient to protect the child in a measure while, by building up its resistance by hygienic surroundings, it may acquire an immunity which may be permanent, or at least sufficient to greatly modify an infectious attack.

Immunity in Chronic Disease

In a chronic disease, like tuberculosis, conditions are usually very different. Here the immunity is generally very short and the individual who has recovered from active tuberculous disease is in constant danger of gradually losing his acquired immunity. This he can maintain only by repeated contact with the disease-producing virus. The tuberculous individual can remain immune only while he is tuberculous —not when he becomes tuberculosis-free.

A woman who has had a not very active tuberculous disease is about to become a mother. Here the tuberculin test will be positive; but in the newly-born infant the test will be found negative. The child, to become positive, must be infected after birth; and then only after a period of perhaps months or years does the skin reaction become positive, when the skin becomes sensitized or allergic.

A tuberculous mother, mildly diseased, after having given birth to a child, dies from some intercurrent disease and, on postmortem, we can demonstrate tubercle bacilli in the placenta. Can we say from these findings that the newly born infant is congenitally tuberculous? We may do so only if we can prove that the tubercle bacilli have actually passed through the placenta and into the fetus. In a mother suffering from mild tuberculous disease this does not take place, and the child is born congenitally free from tuberculosis.

In advanced tuberculous disease and, in the toxic tuberculous, however, when the mother's blood contains many tubercle bacilli and the blood plasma and lymph flow is saturated with toxic material, paralyzing the chorion barriers, the placenta being no longer healthy, tubercle bacilli may then pass and the child becomes congenitally tuberculous — infected and diseased as well. It has been repeatedly demonstrated that foreign bodies entering the maternal blood, like chloroform, strychnine, mercury bichloride or bacteria acting as poisonous bodies, by paralyzing or injuring the placental barriers, may readily reach the fetal circulation, producing death of the unborn infant.

How the tuberculosis immunity is readily lost may be shown by the following example: At a sanatorium, an individual suffering from active, clinical tuberculosis completely recovers — has his tuberculous process arrested — after which he is employed as an attendant about the tuberculous wards. After years of service there, he conceives the idea of going into a country approximately free from all tuberculous disease and moves up into the mountains of northern Canada. Many years later he returns to the United States and, not being successful in obtaining desirable employment, seeks again his former position as attendant upon the tuberculous at the sanatorium, where, in a very short time, he reacquires the disease, but finds that now he is no longer in a position to have the process arrested and rapidly succumbs to its ravages.

While up in those quiet mountains, away from all tuberculous surroundings, leading the life of a hermit, he has perfectly regained his health, but entirely lost his immunity, and must now be likened to an individual who has always lived in such surroundings and then suddenly finds himself placed in a tuberculous environment. It is like carrying tuberculosis to primitive races, in which the disease usually runs a rapid and fatal course.

That a limited protective amount of resistance or immunity is acquired by each generation of every race which has been exposed to the virus of tuberculosis, is evident in the greater resistance of the white race to the disease, as compared with the colored; and that of the colored is greater than that of the Indian, because of the varying years of contact these different races have had with the virus. The white race can trace its exposure to the disease back for many thousands of years; while the Indian's contact dates only about five hundred. The Indian is least immune because of his less number of years of contact.

Immunity in leprosy and tuberculosis is analogous. Leprosy made its appearance in northern Europe about the 6th century and spread with appalling rapidity, reaching its full height about the 13th and well nigh disappearing in the middle of the 16th century, and Europe was again free from this dreaded disease, with the probable exception of few isolated cases in the extreme northern countries of Europe. The disease spread with great rapidity—invading every hamlet, the homes of the rich and the poor alike—the high and the low, the saints and the sinners, and it stopped as abruptly as it came insidiously. From present observations it seems as if the whole European race had become saturated with the leprosy virus; this, correctly interpreted, means that the European has become immunized.

An analogous history is now observable in tuberculosis. When we study the ravages of this disease in the 14th to the 17th centuries, we notice that the severity and the more general distribution of tuberculosis as an endemic disease is gradually lessening and, in this instance also, we may anticipate that, when the human race is saturated with the virus of tuberculosis (probably some hundreds of years from now), as great immunity against tuberculosis may exist as exists at the present day against leprosy.

The history of syphilis, as a chronic disease, is also most interesting. Colles' law states that a child affected with congenital syphilis, its mother showing no signs of the disease, will not infect its mother, and this is because she has acquired an immunity from the previous contact with the virus.

In the diabetic, conception is rare. Impotence is common and may be the earliest symptom. If, however, conception does take place, it is usually followed by abortion; and yet, according to Osler, a diabetic mother may bear a healthy child. There is no instance known of a diabetic mother giving birth to a diabetic child; the course of the disease, for the mother, is however, greatly aggravated after delivery. Here, again, the blood-sugar of the diabetic mother, with its content of diacetic acid and acetone, will not pass the chorionic villi and the newly born infant has but its normal quota of sugar in its blood.

Immunity in Utero from a Tuberculous Mother, Not Toxic

There are usually three fundamentally different ways in which disease is transmitted from parent to offspring; namely, by intoxication, by infection and by true heredity. Tuberculosis is not a truly inherited disease. Infection of the male and female reproductive cells does not occur. However, if the mother is *toxically* tuberculous, then tubercle bacilli may find their way into the fetal tissues; the child is then born tuberculously diseased, and not merely

tuberculously infected. Usually in such cases, the duration of life is very short — more often the child is born dead.

We have no evidence that the sexually ripe male and female reproductive cells, in their descent to and meeting in the uterine chamber, have ever been accompanied by a third party. The union of these cells is the most perfect, the fusion the most intimate, and blending of the cell contents with bacteria, spirochetae or any other foreign body, has never been witnessed. If parasites should be present while fertilization is taking place, destruction, and not union of, the reproductive cells would probably occur.

Conclusions and Summary

Observations, study of the problems of immunity and the clinical teachings justify the following deductions:

1.—Immunity in the acute diseases and in a chronic disease like tuberculosis differs greatly as to durability. In an acute disease, one exposure to the virus is usually sufficient to protect the recovered individual for life, and neither reexposure nor avoidance influences the acquired immunity in any way; but not so in tuberculous disease, where the individual, in order to retain his immunity (and then only relatively), must be constantly reexposed to small infections and remains immune only while he is tuberculous.

2.—The main part played in immunity, in fetal life, really begins at the placenta. The chorionic villi of the placenta will inhibit completely, if in a healthy, but not if in a diseased condition, the transmission of all cellular as well as non-cellular bodies which may be detrimental to the growth and development of the embryo. This includes, besides the red and white corpuscles of the mother's blood, the immune bodies which may have been acquired by the mother from previous contact with acute and chronic diseases.

3.—Leprosy, syphilis and tuberculosis are fast losing or have lost their virulence, and, in time, a racial immunity may be developed to them all.

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Full Term Extrauterine Pregnancy

(Report of a Case)

By A. M. Torrance, M.D. and C. L. Bowman, M.D. Pittsburgh, Pa.

LODGMENT and partial development of the fertilized ovum in the fallopian tube is not a rare complication of pregnancy during the first three months. Its natural termination is tubal rupture or abortion, causing internal or external tubal hemorrhage, with detachment and usually death of the embryo. Death of the mother is also a probability, unless prompt surgical relief is obtained.

It is, however, believed that genuine cases are on record of gestation continuing to term, or almost to term, in an unruptured fallopian tube. Their occurrence, however, is so rare as to be unimportant, though cases do occur in which, after detachment, the fertilized ovum is able to reestablish itself upon the pelvic viscera or parietes, constituting a secondary abdominal pregnancy. Here, development may continue and a living baby be recovered from the peritoneal cavity at term. In less fortunate cases, the fetus attains a degree of development and then perishes. If infection occurs, as is very likely to happen, due to the proximity of the bowel, a fistulous opening is established with the skin, bladder, vagina or rectum. It is in this condition that the periodic discharge of fetal bones is known to occur. Should infection not occur, the fetus becomes mummified and encrusted with lime salts, forming a lithopedion.

History of Case

Our case of secondary, abdominal pregnancy which proceeded to term, occurred in a white woman, thirty-three years old. There had been two previous pregnancies, terminating in difficult labors. The first child, born in July, 1922, was stillborn; the second, in July, 1923, died within twenty-four hours. Puerperal infection did not occur after either delivery and there was no history or findings suggestive of

gonorrheal infection. There was a marked anteroposterior shortening of the pelvis. The patient showed no other abnormalities.

She had had no serious illnesses during her lifetime. The last menstrual period began May 14, 1928. For the first four months of pregnancy she felt extremely well—better than during the corresponding period of the two previous pregnancies. On September 16, while doing her household duties, she suddenly felt dizzy, noticed black specks before her eyes, and became nauseated, but did not vomit. Severe generalized pains were felt over the abdomen, described as being cramp-like in character. She was seen several hours after this had occurred and her temperature was found normal. There was no vaginal bleeding. The picture was one of shock rather than of internal hemorrhage. On this account, a policy of watchful waiting was adopted. Recovery was rapid and the following day she was able to resume her household activities.

Six days later there was a sudden recurrence of symptoms, accompanied by a stabbing pain in the lower abdomen, with dizziness, nausea, pain in the rectum and retention of urine. Again, there was no indication of internal hemorrhage. Following this episode, she remained in bed three weeks. When she attempted to walk, after this time, there was a recurrence or exacerbation of pain, accompanied by a sinking feeling, and twice she fell on the floor as a result. At no time was there vaginal bleeding.

Physical examination of the abdomen disclosed an indefinite mass, slightly to the left of the midline. Vaginal examination caused excruciating pain and no information as to the position of the fetus or pathologic changes in the pelvis was obtained. Gestation was allowed to continue, although the abdominal pain was occasionally severe. During the last six weeks of pregnancy, most of the pain was felt in the left lower abdominal quadrant. Physical examination prior to operation showed the fetus in an oblique position, with a mass immediately below the costal margin. At intervals, fetal movements could be felt. These caused the patient considerable distress. The fetal heart sounds were faintly heard 2½ inches to the right and 1 inch above the umbilicus.

On account of the previous difficult deliveries and the patient's desire to have a living baby, a cesarean section was decided upon. It was done 275 days from the beginning of her last menstrual period. Her physical condition at this time was good.

Operation

A preliminary hypodermic injection of ¼ gr. (16 mgm.) of morphine and 1/150 gr. (0.43 mgm.) of atropine was given. The abdominal cavity was opened by a right lower paramedian incision. The amniotic sac was found adherent to the under surface of the peritoneum so that, when the latter was incised, a gush of clear fluid escaped. The opening was then enlarged, the child extracted and the cord ligated. The uterus, slightly larger than a normal unimpregnated one, was pressed against the pubic bone and tipped to the right. Otherwise, the relations of the pelvic organs were not disturbed. The left tube was stretched over a boggy mass, which was adherent to the posterior surface of the broad ligament and by a narrow band to the posterior surface of the uterus. There was no attachment to the left ovary. The right ovary and tube were normal. The amniotic sac was attached, as already implied, to the under surface of the peritoneum and to a coil of ileum. No blood was found in the peritoneal cavity. Removal of the placenta and membranes caused considerable oozing, which was controlled by pressure. The left tube, ovary and a portion of the broad ligament were removed with the placenta and the stump stitched to the left cornu of the uterus. Only a few small fragments of placenta were left attached to the peritoneum.

The peritoneum and muscle were closed with No. 0 plain double catgut and the fascia with No. 1 chromic double catgut. Four silk-worm gut sutures were inserted through the skin and fascia, and the skin edges were closed with Michel clips. A large cigarette drain was inserted deep into the cul-de-sac.

The patient left the operating room in good condition. The cigarette drain was removed on the fourth day. Her convalescence was uneventful until the ninth day, when she had an elevation of temperature to 100°F. This ranged from 100.5° to 101.5°F. for the next two weeks, eventually reaching normal after a small amount of partially coagulated blood was drained from the cul-de-sac. Ten days after operation a complete decidual cast was expelled from the uterus.

Results

The specimen consisted of left ovary, left tube, a portion of broad ligament and placenta. The surface of the tube was smooth, pink in color and was stretched over a spongy mass. The fimbriated extremity was dilated. The placenta was almost globular in shape, measuring 13 cm. in diameter. On section, it showed a spongy mass with condensed yellow areas scattered through it. The ovary was almond-shaped, measuring 5x3x1 cm. The surface was roughened, gray in color and showed no placental attachment. Histologically, the tube lumen was patent; the plicae blunt and non adherent. There was a noticeable fibrosis with some hyalinization throughout the wall. A few lymphocytes and endothelial cells were deposited on the surface. Section of the condensed area in the placenta showed hyalinized material with small calcium deposits throughout and a variable number of ghost villi. In other places, characteristic chorionic villi and a moderate number of polymorphonuclear leukocytes were found.

The child, a girl, weighed five pounds and five ounces at birth. She made little attempt to nurse. The cry was feeble and she did not regain her birth weight until six weeks of age. (Following the rise in temperature, the mother's milk became insufficient.) It soon became apparent that, in addition to her retarded physical development, she was not mentally alert. At the time of writing (the child is now nineteen months old), she holds up her head with difficulty, makes no effort to creep (although she can use her limbs vigorously) and does not reach for playthings. There is a slight strabismus of the left eye. The posterior surface of the neck and head are almost on a straight line. Her expression is listless and she manifests little concern as to her whereabouts. Both parents deny the occurrence of mental disease in either family.

Comment

The history of this patient, with a long period of sterility, followed by amenorrhea and sudden development of sharp pain, is characteristic of tubal pregnancy. The first attack of pain she experienced, probably coincided with the extrusion of the fertilized ovum through the fimbriated extremity of the tube. A period of time then elapsed before it re-established itself in a position where the placenta was subsequently found. The irritation of this relatively huge foreign body and the later fetal movements, with traction on the mesentery, account, we believe, for the patient's pain and her instability in the upright position.

On seeing her after her first attack of pain, ruptured ectopic pregnancy was considered. The early recovery, and the absence of signs of internal hemorrhage were causes for conservative action. The same may be said for twisted ovarian pedicle. Acute appendicitis and acute salpingitis were discarded, on account of the sudden onset. That the condition was not due to a retroverted gravid uterus, was apparent from the lack of vaginal bleeding and the failure to find the uterine body tipped backward.

A preoperative diagnosis of extrauterine pregnancy at term was not made in this case. The date for operation was decided upon by calculating from the beginning of the last menstrual period. In retrospect, the suggestive history of ectopic gestation; the mass below the right costal margin, which was found to be the fetal head; the occurrence of fainting on standing; and the prominence of the fetal movements, might have suggested the solution.

In most of the cases of ectopic pregnancy proceeding to term, the child has shown developmental defects. A case reported by Richards* is somewhat analogous to ours. In it, however, the child was apparently normal in every way.

South Side Hospital.

*Richards, A. M.: Extra-uterine Gestation at term with healthy baby. *Brit. Med. Jour.*, 1:807, May 4, 1929.

Conscious Control of Attention

The mere unconscious control of attention has become inadequate for the requirements of civilization. The systematic conscious application of psychophysiologic principles assures perfect and continuous regulation.—Dr. R. Arnau, *of New York, in* Med. Times, *Dec.*, 1930.

The Structure and Functions of the Nervous System*

(The Autonomic or Vegetative System)

By George B. Lake, M.D., Chicago

THE central nervous system, the structure and functions of which have previously been discussed, consists chiefly of those neural mechanisms which are concerned with functions and activities which are more or less under our direct and conscious control. The exceptions are due to the fact that many of the upper centers of the autonomic system are located in the medulla and pons, and that the spinal nerves are joined with the sympathetic system, by means of connecting fibers, along almost the entire length of the spinal cord.

The autonomic or vegetative system (sometimes called, collectively, the sympathetic system), on the other hand, is concerned with those functions and activities which, because they are absolutely essential to the continuance of physical life, have been removed below the threshold of consciousness and taken out of our voluntary control; otherwise, through preoccupation, laziness or wilfulness, we might forget or elect to cease sending out the necessary impulses by means of which the vital processes continue in operation. The central nervous system activates the voluntary or "striped" muscles, which are connected to and move the bones of the skeleton; the vegetative system sends its messages to the involuntary or "smooth" muscles, which have no skeletal connections and move the digestive tract, the heart and other internal organs.

The autonomic nervous system has two distinct parts, the functions of which are directly opposed to each other: The *sympathetic,* which prepares for and brings about the expenditure of energy—often in a rather violent manner; and the *parasympathetic,* which is constantly acting to conserve and store up energy. In perfect health these two systems balance each other, so that there is complete equilibrium; but if one or the other is interfered with in any way, its opponent carries on its proper activities unchecked, and lack of harmony, or disease, results.

An example of this opposed action is seen in the heart, which is supplied with sympathetic nerves, from the main trunks, and with parasympathetic fibers, through the pneumogastric or vagus nerve. The former speeds up the heart and increases the pulse rate; the latter slows and steadies the heart beat. If the sympathetic is cut, the heart will gradually stop beating, due to unopposed vagus action; if the vagus is cut, the heart will run wild, because the stimulation of the sympathetic is unregulated.

It will be understood, from the previous discussions, that a nervous impulse consists of two parts: a stimulus coming into the centers from the outside—this may be a sensory activity from any part of the body, or a mental urge from the front part of the cerebrum; and a following motor discharge, going out from the center and resulting in some form of activity, more or less appropriate, in kind and degree, to the impulse which initiated it.

Little is definitely known about the anatomic mechanism of the incoming and outgoing fibers of the autonomic system, but it is certain that they must operate in much the same way as those of the central nervous system. It is known that both incoming and outgoing fibers pass across from the spinal cord to the sympathetic trunks, and it is probable that these are the means whereby autonomic activities frequently influence our conscious life, and *vice versa.*

There are, in man, three great groups of incoming or receiving neurones: the nerves from the internal organs; the nerves from the organs of locomotion; and the very complicated nervous mechanisms, centered in the brain, by which we receive conscious impressions from the outer world.

The first of these represents the evolutionary level of the vegetable kingdom, and the impulses are transmitted entirely through the autonomic system; the second corresponds to the sensori-motor or animal level, and centers in the spinal cord; while the third may be considered as the psychic or human stage of evolution, in which the responses to external stimuli are delayed, modified or inhibited by the operation of intelligence and judgment.

That we do receive sensations from the

*This is the fourth and last of a series of elementary articles which have appeared in this journal.

internal organs is beyond question, though these are not so definite and localizable anatomically, as are the reports we receive through our "five senses." Among the visceral sensations are such vague but easily interpreted impressions as hunger, thirst, nausea, sexual sensations and the feeling of fullness of hollow organs such as the stomach and urinary bladder. We are, no doubt, receiving such messages continually but, under normal conditions, we are unconscious of them. When such sensations became sufficiently powerful to attract our notice, we interpret them as illness or pain.

The Sympathetic System

The sympathetic nervous system consists of two chains of ganglia or nodules of nerve cells, connected by cords of nerve fibers, lying at each side and just in front of the spine and extending from the three large cervical ganglia in the neck (which are now being removed surgically, in some cases of angina pectoris, in order to relieve the agonizing pain) to the single coccygeal ganglion, low down in the pelvis, where the two trunks unite. Except in the neck and the sacral region there is usually a pair of ganglia for each vertebra of the spine, but the structure is not so regular as is that of the central nervous system.

Each pair of spinal nerves sends outgoing branches to the sympathetic trunks and receives incoming branches from them, so that the relation between the two systems is intimate.

The nerve fibers going out from the sympathetic trunks are long and delicate and somewhat irregular in their distribution, having a strong tendency to meet and interlace in networks or plexuses, of which there are eight of major size, three of which are rather well known and are especially important. These are: the *solar plexus* (known to anatomists as the celiac plexus and sometimes called the "abdominal brain"), which lies behind the stomach, against the spine, and is believed to be the center of purely animal consciousness; the superior mesenteric plexus, situated just below the solar plexus and controlling the movements of the intestines; and the hypogastric plexus, occupying a position in the pelvis, and supplying the sympathetic nerves of the rectum, bladder, sex organs and the lower limbs.

An example of the nice adjustment of spinal and sympathetic nerves is found in the bladder. The muscles in the body of this organ are supplied by the sympathetic, while the sphincter or cutoff muscle at its neck has a spinal nerve supply, under voluntary control. As the bladder fills with urine, the sympathetic nerves are stimulated by pressure and cause muscular contractions which press upon the sphincter muscle and give us conscious warning of the condition. As soon as the sphincter is voluntarily released, the bladder contracts and expels the urine without any volitional effort. Under extreme fear the involuntary escape of urine is not uncommon, because the sympathetic system is powerfully stimulated, while, at the same time, our attention is distracted from the sphincter muscle by the psychic disturbance, permitting its relaxation by the pressure from above.

Another marked difference between the structure of the sympathetic and spinal systems is that, in the latter, the nerve cells are practically all contained in the brain and spinal cord, the peripheral nerves consisting entirely of fibers; while in the former, ganglia of nerve cells are distributed along the fibers, especially in the plexuses, where they serve as relay stations for switching the nervous impulses over very wide areas. A pair of spinal nerves always supplies the same parts of the body; but an impulse from the ganglia of the solar plexus, for instance, can be sent to almost any structures supplied by the sympathetic system.

The function of the sympathetic system is to carry on the essential vital activities and, especially, to prepare the body to meet sudden emergencies—to get it ready for fight or flight, as someone has aptly said. It dilates the pupil of the eye; speeds up the heart; contracts the blood vessels in the mucous membranes of the head (causing dryness of the mouth and throat); fills the voluntary muscles with blood; stops the action of all the digestive organs; causes an outpouring of sweat and of the secretion of the adrenal glands; erects the body hairs and otherwise prepares the organism for expending its stored-up energy in sudden and violent activity.

This action is especially notable in conditions of fear, pain and rage and explains the well-known physical manifestations of an attack of anger—the darkening of the eyes, pounding of the heart, flushing and blanching of the face, dryness of the mouth, sweating of the hands and "bristling" of the

eyebrows and sometimes of the hairs on the back of the neck (watch a dog or cat when about to give battle). The feeling of tremulousness and palpitation which follows a fit of anger, *which has not resulted in combat*, is due to the excess adrenal secretion which has been poured into the blood and not used in promoting violent physical activity. The same sensations are produced by an injection of adrenalin or epinephrin.

Here is the basis for the oft-repeated advice that one should not eat when angry, frightened (remember, "worry" is nothing but *chronic* fear!), or in severe pain. The functions of the digestive organs are partially or completely suspended under such circumstances, so that the food will merely lie in the stomach and ferment or putrify, causing severe disorders of digestion later. This is also a sufficient reason for avoiding such paroxysms of negative emotion, so far as it is possible to do so.

The Parasympathetic System

The study of the parasympathetic system is rendered difficult by the fact that it has no gross, anatomic organs which can be seen by the naked eye and handled. Its ganglia of cells are of microscopic size and are situated in the lower part of the brain, in the pelvis and along the course of the blood vessels. Its functions are generally believed to be purely motor, though there are some students who claim sensory powers for it, also.

There are two main sources of parasympathetic energy: in the lower part of the brain—the pons and medulla—flowing out, mainly, through the pneumogastric or vagus nerve and giving rise to impulses concerned in the conservation of physical energy, and in the sacral region, having to do with the emptying of the various abdominal and pelvic viscera—the bowels, bladder, seminal vesicles, etc.

The parasympathetic system is the direct antagonist of the sympathetic. The former helps us to store up energy to meet emergencies, while the latter determines the effective, and sometimes explosive, expenditure of that energy when the emergency arises. It contracts the pupil of the eye; slows the heart; concentrates the blood in the abdominal organs; stimulates the flow of all the digestive juices, including the saliva; and initiates the movements of the stomach and bowels, by which the digesting food is carried on its way.

In perfectly normal persons these two opposing parts of the autonomic system are in exact balance; but few of us are perfectly normal, and so most people tend to show a preponderance of one or other type of involuntary nervous activity.

Persons in whom the parasympathetic system is especially active are known as *vagotonics*. They are reserved and "cold-blooded" people, with a slow pulse, contracted pupils, deep-set eyes, a cool, pale skin, and a tendency to sweat in patches. They are inclined to suffer from overacidity of the stomach, irregularities of respiration and sluggish bowel action, and are very sensitive to such drugs as pilocarpine.

When the sympathetic system is overactive we have the *sympatheticotonic* person, who is lively, excitable and subject to fits of anger, has a rapid pulse, bright eyes with dilated pupils, a ruddy color and a warm, dry skin. These people are very sensitive to adrenalin or epinephrin.

The sympatheticotonic person is, in general, a pleasanter individual to live with, if he can learn to control his temper, but he "burns out" sooner than the cool, staid vagotonic. Each of these types should so regulate his life that the qualities in which he is deficient may be developed.

The autonomic system is very closely related to the ductless or endocrine glands, and the study of one can scarcely proceed profitably without a consideration of the other. Both are intimately connected with that complex of reactions to the vicissitudes of physical existence, which we call the personality, and a careful study of these matters, provided one applies to daily life the knowledge gained, offers a reasonable opportunity for individual improvement and progress.

It is hoped that this brief and fragmentary presentation of the basic facts regarding the anatomic structure and physiologic functions of the various divisions of that immensely complicated mechanism, by means of which the world becomes comprehensible to us and we are interpreted to the world and enabled to move about upon and above its surface with safety and discretion, may refresh and supplement the knowledge of these facts already possessed by many, and stimulate a few to the deeper study of these highly interesting and vitally important components of man's physical investiture.

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PHYSICAL MEDICINE and STANDARDIZATION

IN CONTRAST with physiotherapy, physicotherapy, physical therapy, drugless therapy and other allied and restrictive terms, which have become obsolete, equivocal or antagonistically provocative, *physical medicine*, is connotative of everything, both in the abstract and the concrete, that should inhere in such a vital component of the art and science of medicine. It incisively demarcates this scientific and special field from the unscientific *ignes fatui* of both medical and non-medical visionaries, just as the M.D. degree similarly differentiates the scientifically graduated from the imperfectly and myopically educated practitioners of the healing art. If "a name is a kind of face whereby one is known," a wise practitioner will, not only be eager to *possess* a reputable label, but will be even more solicitous to deserve and sustain it.

Drug nihilism ensued from the diverse methods and conflicting standards of drug manufacturers of an earlier and empiric period. Prior to scientific and cooperative control, as powerfully effected by the Council on Pharmacy and Chemistry, the distinction between a therapeutic, a poisonous and an entirely inefficient dosage of any medicament depended, more or less aberrantly and illogically, upon the personal and often erratic concepts of each individual druggist.

Physical therapy (medicine) is tediously, although surely, evolving standardized methods of treatment but, until the working tools of the apprentice are initially standardized, the road to masterly expertness will more often remain a *via dolorosa* than an ever-accelerating approach to scientific and practical achievement. The ambiguous, arbitrary terms employed to designate vastly differing qualitative and quantitative high-frequency currents; ultraviolet and infra-red generators; wave and sinusoidal modifications, and other physical therapy apparatus, is as chaotic as it is exasperating and detrimental to scientific organization and development.

The cost of apparatus is already high enough to intimidate those who do not sufficiently appreciate its therapeutic value, and it is neither good business nor scientific physical medicine for manufacturers to differ so radically, one from the other, in their constructional views. "Some, to the fascination of a name, surrender judgment hood-

winked"; physical therapy terms and labels should be so practically descriptive and standardized as to require no special or biassed interpretation by every one specially and individually concerned. It is worthy of appreciative consideration that the two oldest electrical agencies—galvanism and static electricity—remain today as simple and correct in our understanding as they are in practical application.

It should be the imperative duty of all physical therapy societies annually to direct their chairmen of the several committees on standardization of physical therapy apparatus and measures to bring all such committees of all such societies together, personally or by mail, in order to discuss their respective findings and recommendations. Only by such a consultative and representative combination of forces can the standardization of physical medicine be accelerated, and adequate pressure be brought to bear upon manufacturers to standardize according to definitely recognized, authoritative requirements.

As long as differing authorities agree to disagree, so long and no longer will physical medicine remain predominantly an art, rather than an assured science. Only when those practitioners of medicine more especially interested in the practice of physical medicine shall, themselves, resolve their differences, can those indefatigable and indispensable co-adjutants, the manufacturers, be logically expected to resolve the diverse and divergent opinions, now bewilderingly presented to them for assimilation.

J. E. G. W.

The Elements of Physical Therapy

Arranged by Frank Thomas Woodbury, A.B., M.D., New York City
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THERAPEUTICS is the transfer of energy to a living being, for the purpose of preventing, ameliorating, curing or modifying abnormal structure and function.

Energy is available as kinetic or potential energy.

Therapeutics employs potential energy in two forms:

1.—*Chemical energy* (of drugs)
  A.—Organic (vegetable, animal)
  B.—Inorganic (gases, liquids, solids) called *pharmacotherapy*.
2.—*Psychic energy* called *psychotherapy*.

Therapeutics employs kinetic energy in five forms:

1.—Electrical
2.—Electromagnetic
3.—Radiant
4.—Thermal
5.—Mechanical

to produce (chemical / thermal / mechanical) energy in living tissues, in order to excite local and constitutional, as well as psychic, reactions. This is called *physical therapy*.

Life is a manifestation of energy, and organs are merely mechanisms especially adapted for the capture, storage, conversion and liberation of energy.

In order to produce a therapeutic effect, an applied energy must be absorbed in some form by the living cells. In physics this is called doing work, the applied energy being changed into other forms of energy, some of which are utilized to produce physiologic reactions; some of which are lost, as heat.

It may be stated as a therapeutic dictum that the remedy effecting the desired reaction is the energy in the form in which it is absorbed. Conversely, the real remedy is not the agent or drug, the apparatus or instrument nor the form in which the energy is applied. For example, the following terms are meaningless unless further qualified: surgical treatment, hydrotherapy, anesthesia, high-frequency treatment, light baths, a sleeping draught, a hypodermic injection, etc.

Based upon the above dictum, physical therapeutic treatments can all be classified under the following headings, denoting the

form in which the energy is absorbed in the living body: *thermotherapy, chemotherapy, mechanotherapy* and combinations of these with each other.

THE MODALITIES OF THERMOTHERAPY

Thermotherapy is administered in four different ways, called modalities: conductive heat, convective heat, conversive heat and retained heat.

1.—*Conductive heat* is that modality of thermotherapy in which the temperature of the body is raised or lowered by contact with bodies hotter or colder and has two aspects: wet and dry.

Wet Conductive Heat

Static:

Immersion tub bath.
Hot or cold pack.
Hot or cold drinks.
Hot or cold enemas.
Hot or cold compresses.
Fango baths.
Freezing mixtures.

Kinetic:

Hot or cold immersion water bath with friction:
a.—Manual.
b.—Effervescent, natural spa.
c.—Effervescent, artificial.
d.—Bubble bath, mechanical.
e.—Foam bath.
Whirlpool bath.
Shower.
Douche.
Needle spray.
Ice rubs.
Hot and cold mitten rubs.
Hot and cold pack with friction.
Drip sheet with friction.
Continuous colonic irrigation.
Swimming and wading in fresh or salt water.

Dry Conductive Heat

Static:

Hot blanket
Sand bath.
Bran bath.
Hot water bag or bottle.
Electric pad or blanket.
Leiter's coil.
Paraffin bath.
Hot bricks.
Hot salt bags.
Actual cautery.
Carbon dioxide snow (CO_2).
Ethyl chloride freezing spray.

Kinetic:

Hot flat iron.
Hot salt rub.

These modalities may be applied as medicated, radioactive, effervescent, electrolytic or as the socalled neurovascular contrast tonic baths. Conductive thermotherapy is usually considered under the name of hydrotherapy and balneology. The medicinal effects obtained by the drinking of natural mineral waters from spas or artificially compounded mineral waters, is a branch of pharmacotherapy which is called crounotherapy. It is not, except for radioactive waters, a part of physical therapy.

2.—*Convective heat* is that modality of thermotherapy where the temperature of the body is raised or lowered by means of the external application of flowing gases, which carry away heat from the surface of the body, bring heat to it or prevent heat from being dissipated from the body. Convective heat has two aspects: wet and dry.

Wet Convective Heat

Static:

Steam or vapor in cabinets or closed rooms. (May be medicated.)

Kinetic:

Weathering; exposure to open currents of humid air (a form of climatology.)

Dry Convective Heat

Static:

Hot, dry air in cabinets or closed rooms or ovens.
Cold dry air in cabinets or closed rooms.

Kinetic:

Hot or cold air douches; fans and punkahs; ventilation.
Weathering—exposure to open currents of dry hot or cold air (a form of climatology.)

3.—*Conversive heat* is that modality of thermotherapy where the temperature of the body is raised by the conversion of electromagnetic, radiant or kinetic (i.e., inductive) energy into heat within the tissues, and has three aspects: electrothermy, photothermy and mechanothermy.

Electrothermy

1.—Where a high-tension current, having oscillations over 10 kilocycles per second, passes through living tissues:
Diathermy (endothermy).
Electrocoagulation.
Acusection.

2.—Where the patient is not in the cir-

cuit but is within the field of electromagnetic force having a changing value of over 10 kilocycles per second.

Autoinduction (called, by older writers, autoconduction).

Resonator brush discharge.

3.—Where the patient is in the dielectric field between two condenser plates and is subject to an electrostatic field having a changing value of over 10 thousand alternations per second:

Autocondensation.

Radiothermy.

Photothermy

Radiant energy from heated sources, having a spectrum lying between circa λ 550 mμ and λ 1.4 μ, is used in photothermy. While the rays in question may contain wave lengths having chemical effects, these must be insignificant in proportion to the wave lengths producing heat when absorbed. There may be, also, wave lengths of energy which are not absorbed and are therefore not to be regarded.

The sources of photothermy are: Obscure (infrared) heat radiation from hot black bodies; luminous heat radiation from incandescent bodies, such as electric stoves and heaters with reflectors, having mineral or metallic elements, also carbon- and tungsten-filament lamps with reflectors and electric arcs with special composition carbon electrodes; solar or carbon-arc radiation, with glass screens to eliminate the chemical rays.

Mechanothermy

Local:

Friction.
Slapping.
Whipping.
Needle spray.
Vibration.

Constitutional:

Active exercise.
Passive exercise.
Needle spray bath.

Note. While molar kinetic energy is convertible into molecular kinetic energy, i.e., heat, mechanothermy is really a form of enforced hyperemia of the skin and subcutaneous tissues, together with a stimulation of metabolism in general with internal thermogenesis.

Retained Heat

Any procedure which will prevent the dissipation of heat by way of radiation from the surface of the body may be employed therapeutically under this heading. Thus, impervious or insulating coverings, such as clothing, bedding, dressings, viscid or oleaginous liquids; casts of plaster, water-glass or starch; immersion in oil; the foam bath and many of the other heat modalities act in this way.

THE MODALITIES OF CHEMOTHERAPY

(*As employed in physical therapeutics*)

Chemotherapy, as employed in physical therapy, includes all physical applications which cause constitutional changes intimately connected with a stimulated endocrine or vitamin activity and basal metabolism increase, as well as local chemical changes in the tissues directly absorbing the energy.

We discern two modalities: electrochemy and radiochemy.

Electrochemy

1.—Local effects in the region under and between electrodes, from a direct, continuous, constant current between circa 0.25 and 50 milliamperes in volume, for medical and minor surgical effects, using under 100 volts tension; and a current up to 1500 milliamperes in volume and between 100 and 180 volts tension, for major surgical effects.

A.—Positive electrolysis.

B.—Negative electrolysis.

C.—Bipolar (surgical) electrolysis (method of Massey).

D.—Cataphoresis.

E.—Iontophoresis.

2.—General or local chemical effects connected with stimulated basal metabolism or tissue oxidation, from the employment of high-tension currents (over 100,000 volts) and below 1/10 of a milliampere in volume, where there are distinct physiologic polarity effects and negligible electrolytic effects.

A.—General negative condensation, either static or surging, the patient being insulated.

B.—Concentrated positive condensation, either surging or mobile, the patient being insulated.

C.—Concentrated condenser applications, static or mobile, insulation of patient immaterial.

D.—Disruptive and convective discharges from electrodes to insulated patient.

3.—Electronic bombardment with free electrons. Effects are local and produced

by Beta rays from actively disintegrating radioactive elements and cathode rays from a Coolidge cathode ray (Lenard rays) tube.

Radiochemy

Local and general changes effected by the absorption of radiant energy give us radiochemy.

1.—Photochemical rays: Spectrum lying between (approx.) λ 500 mμ and λ 150 mμ.

2.—Grenz rays: Spectrum in region of λ 2 A.U.

3.—Roentgen rays: Spectrum between λ 725 A.U. and λ 0.058 A.U.

4.—Curie rays (gamma rays): Spectrum between λ 0.1 A.U. and 0.01 A.U. (Cosmic rays are not used therapeutically.)

THE MODALITIES OF MECHANOTHERAPY

A.—*Active motion.*
- Occupational therapy.
- Games.
- Sports.
- Gymnastics.
- Drills.
- Dancing.
- Swimming and ocean bathing.

B.—*Passive motion.*
1.—Manual
- Massage } surgical
- Manipulation } medical

2.—Mechanical
- Oscillators
- Vibrators
- Zander apparatus
- Surgical appliances
  - extension
  - splints
  - casts, etc.
- Pneumatic massage.

3.—Electrical.
- Low-voltage.
  - Interrupted and surging direct current.
  - Continuous, interrupted and surging alternating current.
- High voltage.
  - Continuous, interrupted and surging faradic.
  - Surging condenser charges with patient insulated.
  - Condenser sparks with patient insulated.
  - High-tension brush discharge, patient insulated.
  - Static induced current of Morton, frequency below 10,000 cycles per second.
  - Vibrations of audiofrequency produced by (thermionic valve tube) oscillating currents.

C.—*Atmospheric pressure.*

1.—Positive pressure.
- Compressed air chambers.
- Pulmotor.

2.—Negative pressure.
- Cupping (Bier's).
- Altitude.

3.—Varying rhythmic pressure.
- Mechanical respirators.

Although some of the familiar shibboleths which are used so loosely and often inaccurately in medical literature are missing from the above table, they are nevertheless to be discovered under the proper name of the energy created in the tissues, which is the real remedy in therapeutics.

471 Park Ave.

VIS MEDICATRIX NATURAE

Nature is a potent factor in restoring the pathologic to the normal and it is the part of common sense, not only to recognize and utilize that force more freely and frankly than is done in the practice of medicine, but perhaps, even more, not unwisely to run counter to that force.

Far more than is justifiable in experience or in the nature of things, the student is left with the impression, so commonly shared by the laity, that a disease process demands a cure rather than a recovery; a something active from without, commonly from a bottle, rather than a restoration from within, often supported only by measures that promote comfort and insure rest and proper hygiene. The necessity of doing something is so deeply rooted in human psychology that it can never be quite ignored.—DR. JOS. BRENNERMANN, *of Chicago, in* Am. J. Dis. Child., *July, 1930.*

CLINICAL MISCELLANY

Opposed to "Physical Medicine"

I *HAVE* read the rather ingenious editorial in the May number of CLINICAL MEDICINE AND SURGERY several times, and am opposed very much to the term "Physical Medicine," or any other term which includes the practice of radiology or roentgenology. In this connection I desire to make a distinction between these terms. Radiology, to me, means the science which covers both the use of the roentgen rays and radium; while roentgenology means the use of the x-rays alone.

I am at a loss to understand in what way roentgenology or radium could ever form a part of socalled "Physical Medicine," unless you mean the term to cover the entire art. There is no more reason why radiology should be a part of physical medicine than should dentistry as, in the latter, electricity is used to operate the various dental instruments, and is used in radiology only to generate the force which, for want of a better term, we call the x-rays.

Also I see no reason why the diagnostic lamp of the otolaryngologist should not be classed as physical medicine, to say nothing of the various modern instruments which are operated by this same source of energy. Indeed, to carry out these ideas would put the entire art of practicing medicine under the term physical medicine, and the practice as we now know it would simply be the administration of drugs.

Personally (and this is, possibly, more or less prejudice), I should still use the term physical therapy, and include the socalled various forms of light and the application of heat called diathermy.

W. H. GILMORE, M.D.,
Chicago, Ill.

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[We are glad to publish Dr. Gilmore's comments, even though we do not agree with him, and he seems, in certain particulars, not to have understood our position.

We said, rather definitely, that no diagnostic procedures should be included under "Physical Medicine"—only treatment. We also clearly excluded surgery, of which dentistry is a branch, from this classification. We even expressed a doubt as to the propriety of including operations performed by electricity (electrocoagulation, electrodesiccation and the like) in this category.

Dr. Gilmore, being an enthusiastic roentgeno-radiologist, is entitled to a certain degree of prejudice; but we should like to include his radiologic *treatments* under "Physical Medicine," while excluding his roentgenologic *diagnoses*.

Physical therapy, as now understood, of course includes far more than actinotherapy and thermotherapy, taking in electrotherapy (with galvanic, sinusoidal, static and other currents), hydrotherapy, massotherapy and mechanical vibration, therapeutic exercises and occupational therapy (at least in its physical aspects), and possibly, also, diet and several other drugless methods of healing.

We should, however, be the last to build any high-board fences around any particular field of therapeutics. The surgeon (and even the radiologist) should know something about drugs and electric currents; the otolaryngologist should be familiar with diathermy and roentgenology; and the general practitioner must know something about everything.

We shall welcome further discussion along these lines, as it should help to clarify our thoughts and straighten out our nomenclature.—ED.]

Radiation Therapy of Tumors of Genito-Urinary Tract

When papillary tumors of the urinary tract exist, which are fungating and developing with fair rapidity and have a good blood supply, I think they will almost completely disappear by roentgen therapy alone, although, of course, never being permanently cured.—DR. U. V. PORTMANN, of Cleveland, O., in *Radiology*, Nov., 1930.

Verrucca Plantaris

Verrucca plantaris is a more common disease than is generally recognized. It is caused by an infective agent and is contagious.

X-ray treatment is the method of choice. The dose is twice that required to produce a mild erythema on the flexor surfaces, with

unfiltered radiation, limited to the bounds of the region, followed if required, after three weeks, by a dose of one and one-half erythema intensity.—DR. I. N. SISK, of Madison, Wis., in *Radiology*, Nov., 1930.

Diathermy in Eye Diseases

Pain in the eye, from whatever cause, in any chronic eye disease, is always relieved by diathermy.—DR. P. FIGDOR, in *Brit. J. Ophthal.*, Aug., 1930.

Physical Therapy

BY *ALL* means, stick to the term "Physical Therapy," as that means much. "Medicine" has so long been associated with *drugs*, that, when used in connection with physical agencies, it confuses the issue.

After forty years, *electrotherapeutics*, has been recognized and will "stay put," but it now has so many "in-laws," so closely allied, that the term, physical therapy, should be used to include any and all physical measures (as distinguished from drugs) used in the treatment of disease. To this list there may be added, at some time in the future, other agencies, now considered *metaphysical*.

Keep on with "Physical Therapy," for a while, at least.

H. C. BENNETT, M.D.,
Lima, Ohio.

Misleading Urinary Tract Information with Uroselectan

In a case in which the clinical and other evidence pointed to a ureteral calculus, a ureterogram, following injection of uroselectan, showed that the suspected stone seemed to lie in the axis of the ureter. Later on, a picture taken with a catheter in position showed the suspected stone to be at least ¾-inch from the ureter. Possibly considerable unnecessary surgery will be undertaken if the use of uroselectan is generally adopted as a substitute for the older and more reliable method of procuring roentgen-ray pictures of the kidney pelvis and ureter.—DR. J. D. SPAULDING in *New England J. Med.*, Nov. 27, 1930.

Polypi of Accessory Nasal Sinuses

A review of 1,000 sets of sinus roentgen films, at two hospitals of Madison, Wis., showed the occurrence of intrasinus polyposis 25 times. A polyp is recognized in the sinus film by its smooth, circular body of relatively short radius. The radius is always shorter than the average radius of the sinus cavity, for, until the polyp completely fills the cavity, some portion of its surface can be seen in silhouette and the curvature of this border will be rather sharply convex.—DR. F. J. HODGES, Madison, in *Radiology*, Dec., 1930

RECENT ABSTRACTS

The Roentgen Rays in Obstetric Diagnosis

A review and evaluation of the use of the roentgen rays in obstetrics, especially in abnormal conditions during pregnancy, in *Am. J. Obstet. & Gynec.*, Nov., 1930, by Dr. H. B. Matthews, of Brooklyn has led to the following conclusions:

1.—A positive roentgenogram of the fetal skeleton is proof of the existence of pregnancy. This may be added as a fourth positive sign of pregnancy and may be obtained as early as the fourteenth to fifteenth week in 15 percent of cases, at sixteen to eighteen weeks in 75 percent and beyond the eighteenth week in 100 percent of the cases.

2.—A positive diagnosis of normal and abnormal pregnancy, including many types of fetal abnormalities, can be made by the roentgen rays, provided the pregnancy is at or beyond the eighteenth week. The farther advanced the pregnancy the more positive the diagnosis.

3.—A positive diagnosis of fetal death can be made by roentgen rays, apparently within three or four days after death, provided the pregnancy is at or beyond the sixteenth week.

4.—A positive diagnosis of pregnancy complicating fibroids of the uterus can be made by the roentgen rays, provided the duration of the pregnancy is of sixteen weeks or more.

5.—A positive differential diagnosis between pregnancy and other pelvic tumors (soft myoma, ovarian cysts, etc.) can be made by the roentgen rays, provided the pregnancy is at or beyond the sixteenth week.

6.—Every patient who is a candidate for cesarean section should have a roentgenogram taken, to determine the normality of the child.

7.—A positive roentgenogram may be offered in court cases as proof that pregnancy exists.

8.—Finally, it is highly desirable that the

obstetrician cooperate with the roentgenologist and thereby help to further develop, simplify and popularize a very important adjunct in obstetric diagnosis.

A "Peak Voltage" in Diathermy

It has been asserted that it is voltage rather than current which determines the heat production below the diathermy electrode. In *Radiology*, Dec., 1930, Dr. A. Hemingway, of the Department of Physiological Chemistry, University of Minnesota, gives the results of some experimental work undertaken with the intention of investigating quantitatively the effects of voltage variation on heat production in diathermy. It was found that the "peak voltage" was determined by the spark gap interval—the wider the gap the greater the peak voltage.

The heat energy of diathermy is determined by the current and not by the peak voltage. Variation of the spark gaps, and hence the peak voltage, affects the heat production only in so far as it varies the diathermy current.

Cholecystography

In *Radiology*, Dec., 1930, Dr. M. Feldman, of Baltimore, analyses his results in 500 cases in which cholecystography, using tetraiodophenolphthalein by the oral route, was employed for the diagnosis of gall-bladder disease. In 287 cases the findings were abnormal, while 213 were diagnosed as normal. The gall-bladder filled in 358 cases, the filling being poor in 116. In 302 cases of filled gall-bladders, 208 contracted normally, 46 abnormally, and in 47 the vesical shadow was absent following a fatty meal.

Eighty-six (86) of the patients came to operation and in 81 (94.2 percent) the diagnosis was proved correct. Of these 86 cases, 37 showed an absence of the gall-bladder shadow in the 16-hour examination; at operation, 30 of these revealed stones and 7 cholecystitis. Of the 49 filled gall-bladders which came to operation, 24 revealed stones, 7 cholecystitis and 18 were normal.

The highest percentage of correct diagnoses occurred in cases of stones and in the gall-bladders that failed to fill. Diagnostic errors occurred generally in cases with poor filling or faint shadows.

Although a high percentage of correct diagnosis of gall-bladder disease is revealed by means of cholecystography, this method of examination must be considered in the same light as any other laboratory test—that is, in conjunction with the clinical data.

Physical Therapy in Sinusitis

Dr. L. Feldman, of Boston, Mass., in *Brit. J. Actinother. & Physiother.*, Dec., 1930, is of opinion that, in selected cases of sinusitis involving one or many of the sinuses, where patients have not been relieved or improved by the usual classical methods of treatment and where operation is refused, properly applied physical therapeutic measures have certainly been found to be a valuable aid.

The methods used by the author are indirect diathermy or high-frequency treatment to the involved part, the patient being seated on a condensation chair or couch or put in contact with one terminal of a high-frequency machine, the fingers of the operator being placed in contact with the areas overlying the particular sinuses involved, and the heat applied for an average of ten minutes at a degree of comfortable tolerance. In 100 acute cases, nearly all were relieved or cured; in 35 of 75 subacute cases the patients were definitely relieved and the other 40 partly relieved. The results in 25 chronic cases were not encouraging.

Radiotherapy of Thyrotoxicosis

Radiologic literature relating to the treatment of thyrotoxicosis is extremely meager in adequately controlled objective data on which the student may base an opinion. Even on the basis of this inadequate study, from 20 to 50 percent of failures are commonly admitted.

Very mild, early, adolescent cases and patients with associated lesions incompatible with a reasonable life expectancy, may advantageously be given radiotherapy.

Radiotherapy offers no advantage over a short course of iodine as a preparatory preoperative method of treatment.—Dr. H. M. Richter, of Chicago, in *Am. J. Surg.*, July, 1930.

Small Doses of Ultraviolet Rays

In *Klin. Wchnschr.*, Dec. 6, 1930, Dr. H. Vollmer, expresses the belief that, in treating rickets, the size of the dose of ultraviolet rays is not important. In fact, small doses seem to produce as good results as larger ones, and therefore it is, not merely needless, but may even be harmful to overburden the child with long exposures—to say nothing of the waste of time and electric current.

The dose recommended is four to five minutes' exposure, front and back, to a quartz-mercury lamp at 80 cm., *once a week*.

X-Rays in Tuberculous Cervical Glands

In *Med. Herald, Phys. Therap. and Endocrine Survey*, Dec., 1930, Dr. A. D. Willmoth, of Louisville, gives his opinion that, generally, the surgical removal of tuberculous cervical glands gives only temporary relief. In his experience, the proper use of x-rays has been a most potent measure in these cases. Some have decried its use, saying that it produces dense adhesions of the infected glands to surrounding structures, and that, in the event that surgery is later deemed advisable, increased dangers and difficulties are present.

The author's technic is as follows: Time, six minutes; distance, 21 inches; milliamperes, 5; filter, 6 millimeters of aluminum; kilovolt peak, 120. Treatments are repeated each week for four consecutive weeks. Patients are then dismissed and told to return in sixty days, at which time the treatments are repeated. This is done on three or four occasions, as the case demands. They are then told to return in ninety days, and, according to the progress of the case, it is

determined whether or not more treatments should be given. In some, as many as four series of treatments are given, after which, if the glands are diminishing decidedly, the patient is advised to come once a month for observation. Several months must be allowed for the effects of the rays to produce the maximum results.

For at least ten days before and after each treatment, the patient must use no medicinal agent on the neck that will induce an x-ray burn. No solutions nor salves should be permitted that contain iodine, tar preparations, resorcin, mercury, chrysarobin, iodoform, pyrogallic acid, carbolic acid or sulphur.

Radium in Gynecology

In *Canad. M. A. J.*, Dec., 1930, Dr. S. Forsdike, of London, Eng., remarks that reports on a 5-year basis will alone enable us to assess the true value of radium in the treatment of malignant disease. His own series of cases consists of 211 (181 treated by radium alone), divided as follows:

(1) Cases in which the disease was limited to the cervix (operable), 14; (2) cases in which the vagina and parametrium were involved and the uterus tethered (borderline), 53; (3) cases of advanced disease (inoperable), 144.

Of the operable cases, 5 (28 percent) patients were alive for 5 years or more following radium treatment.

Of the 53 borderline cases, 4 patients are alive at the end of 5 years. In 10 a radical operation was made possible.

Of the 144 inoperable patients none was cured (alive for 5 or more years), but 134 patients were palliated, with prolongation of life.

The rate of 5-year cure in all cases treated by radium was 4.5 percent; in the borderline cases 12 percent and in the operable cases 28 percent.

Treatment of Erysipelas by Ultraviolet Irradiation

Reviewing the literature of the treatment of erysipelas (especially in infants) by ultraviolet rays, Dr. R. King Brown, in *Brit. J. Actinother. & Physiother.*, Sept., 1930, states that the results so far attained have been distinctly encouraging, but only few have ventured upon it. This is not surprising, for the remedy seems a most unlikely one and most workers might hardly think it worth a trial. Erysipelas causes fever, intense inflammation and irritation of the skin and subcutaneous tissues, so what can be the use of adding still another irritant to an already inflamed skin? This assumption, however, has been shown to be quite wrong by those who have had the temerity to experiment contrary to preconceived ideas. Clinical evidence of the value of ultraviolet irradiation in erysipelas is amply available to all who take the trouble to study the literature on the subject before pronouncing an opinion. Ude and Platou, of Minneapolis, analyzing the results in 402 cases so treated in the Minneapolis General Hospital, found that "ultraviolet irradiation has none of the objectionable features of the other methods, while it seemed to excel them in effectiveness." These authors add, "we are now using ultraviolet radiation in all our cases of erysipelas."

Roentgenology of the Appendix

In *Surg. Gynec. & Obstet.*, Dec., 1930, Dr. J. L. Larimore, of St. Louis, states that it was possible to visualize the appendix roentgenologically in more than 34 percent of 4,049 cases examined.

The operative confirmation of roentgenologic findings in 358 cases has justified the use of this method in diagnosis.

Only roentgenology will develop the intrinsic and direct signs of appendiceal pathologic change. Roentgenograms will, in a large percentage of instances, show the appendiceal lumen. Often this will indicate definite anatomic changes.

Chiefly with, but also without visualization, there may be adduced from films and by fluoroscopic palpation, associated evidence, which will have additional significance. Such objective evidence of anatomic change is not, alone, proof of an active relation to any clinical syndrome. It must find definite correlation to the clinical findings.

The roentgenologic facts about the appendix are objective and valid facts which cannot rightly be ignored in diagnostic attention to the appendix. Their consideration in connection with other findings in alimentary and abdominal syndromes will increase the accuracy of diagnosis and can bring about improvement in the adverse statistical results of surgery of the appendix.

New Method of Using Diathermy in Impotence

In the diathermic methods usually employed in the treatment of impotence, endeavor is made to stimulate the prostate, in the belief that the cause of the impotence resides there.

In *Urol. & Cutan. Rev.*, Nov., 1930, Dr. J. Echtman, of New York, suggests that the stimulation should be scrotal and describes the following new method of applying the diathermic electrodes:

The patient lies on his back. A metal plate, 12 inches by 9 inches, prepared in the usual way to serve as the indifferent electrode, is placed under his buttocks. A towel, folded lengthwise, is stretched across the thighs, under the scrotum, so that the latter rests on the middle of the towel. A mesh electrode, 6 inches by 7 inches, previously dipped in warm water, is placed on the scrotum. The middle of the upper edge of this electrode is in contact with the scrotopenal fold. The skin at this fold is very delicate. To avoid burning, the penis is drawn up and the edge of the electrode is folded over upon itself for about one-half inch. The penis is then replaced on the mesh, thus causing it to partake in the diathermy treatment. The other edges of the mesh electrode are resting on the towel and burning is prevented. If, however, burning in some point is felt, a piece of cotton placed between the mesh and that point, will give full protection.

The wires are now attached to the electrodes.

The genitalia are covered with a towel and a light sand bag is placed on it, just over these organs. The current is opened, using the stimulative form of diathermy for 20 minutes. Six to eight hundred m.a. is the usual strength of the current employed. Too much heat must be avoided. The patient should feel a pleasant and comfortable warmth. There is no fear, using the proper technic, of injuring the spermatozoa by this method. Treatments are given three times a week.

Decrease in Efficiency of Ultraviolet Lamps

There are, according to W. T. Anderson, Jr., of Newark, N. J., in *M. J. & Record*, Dec. 17, 1930, many life-shortening factors which may be operative in connection with ultraviolet lamps, with the result that there are very great variations in the degree and rates of deterioration of different burners.

The life of the quartz-mercury arc is exceptionally long, when compared to other light sources. The two principal factors in the aging of the quartz-mercury lamp are: diminution of the transparency of the glass container, from various causes; and the wattage of electrical energy consumed within the lamp, which works toward vacuum reduction. The average operative life of the quartz-mercury arc lamp, mercury-anode type, is five thousand hours, but many have been in use for much longer and still produce about 50 percent of their original ultraviolet intensity, so that a discolored and aged quartz-mercury arc lamp is still an efficient source of ultraviolet rays.

But the physician who needs a very intense source of ultraviolet rays will do well to exchange his burner frequently.

The Principles of Radiation Treatment

From a study of radiation, confined to gamma and x-rays, Dr. F. Carter Wood, of New York, in *Ann. Intern. Med.*, Jan., 1931, concludes that:

The action of radiation is in all probability due to the secondary effect of free electrons, released by the action of the rays, on the atomic structures of the tissues.

The effect on the individual cell is independent of the wave length.

The effect on large masses of tissues is dependent on the wave length, in that the intensity of the radiation at any given depth is a function of the wave length and the scattering of the rays in the tissues.

The effect is twofold, primarily a direct one on the cells, and a secondary nutritional damage due to vascular injury. No proof is yet available of tissue toxicity as a factor in cell destruction.

There is no evidence of a cellular immunity following radiation.

Cells vary greatly in their sensitivity to radiation, for reasons as yet unknown.

The ultimate evaluation of the therapeutic possibilities of radiation rests on clinical observation.

Roentgen Therapy in Certain Skin Diseases

In *Wisconsin M. J.*, Sept., 1930, Dr. E. A. Pohle points to the value of x-ray treatment in many types of skin diseases.

The most efficient treatment for tinea tonsurans in epilation by means of roentgen rays. A standard technic has been worked out and is generally accepted. The skull is divided into four triangular areas, requiring five exposures in order to obtain the same dose over the entire scalp. Filtered x-rays (1 to 2 mm. Al.), in doses of from 300 r to 400 r will usually produce temporary epilation. It is best to epilate the whole scalp.

The x-rays constitute one of the best therapeutic agents for many types of eczema. As a rule, small doses should be applied, according to the fractional method. This holds true particularly for the acute type. Unfiltered or lightly filtered x-rays, not over 50 r in a single sitting, should be considered.

In psoriasis, sometimes one single dose of 150 r to 300 r will cause the lesions to disappear. As a rule, it is probably better to use also, in this disease, the fractional dose method by applying 50 r to 100 r every 4 to 10 days and repeating it not more than three times.

BOOKS

Beilin: Gall-Bladder Disease

GALL-BLADDER DISEASE. Roentgen Interpretation and Diagnosis. *By David S. Beilin, B.S., M.D., Roentgenologist, Augustana Hospital, Chicago; formerly Instructor in Anatomy, University of Illinois College of Dentistry, Assistant Instructor in Surgical Pathology, University of Illinois College of Medicine, and Graduate Assistant in Department of Roentgenology, Massachusetts General Hospital, Boston. St. Paul and Minneapolis: Bruce Publishing Company. 1929. (Distributed by the General Electric X-Ray Corporation, 2012 Jackson Boulevard, Chicago). Price* $6.00.

This is really an atlas on the roentgen-ray study of the gall-bladder region, consisting of 65 pages.

In the first half of the work, the embryology, anatomy, function and pathology of the gall-bladder are discussed, and also the author's technic for making the necessary films.

Dr. Beilin discusses the method of roentgen-ray diagnosis of gall bladder disease before cholecystography and shows various types of the normal gall-bladder. He also details the sources of error in cholecystography and demonstrates shadows which simulate biliary calculi. The last 32 pages are devoted to case histories showing the laboratory, roentgenographic and operative findings.

The presentation is practical and is another demonstration of the fact that the oral method of administration of the gall-bladder dye is very satisfactory, when intelligently done. The author's particular method of making the examination

is, of course, only one of the ways in which equally satisfactory results may be obtained.

This atlas should be of interest to the internist and surgeon, as well as to roentgenologists, and should be particularly valuable to the physician not in close contact with a competent roentgenologist, who desires to use all possible means in arriving at a correct diagnosis of pathologic changes in the region of the gall-bladder.

W. H. G.

Rhinehart: Roentgenology

ROENTGENOGRAPHIC TECHNIQUE. A Manual for Physicians, Students and Technicians. *By Darmon Artelle Rhinehart, A.M., M.D., Professor of Roentgenology and Applied Anatomy, School of Medicine, University of Arkansas; Roentgenologist to St. Vincent's Infirmary, Baptist State Hospital, Missouri Pacific Hospital, and the Arkansas Children's Hospital. With 159 Illustrations. Philadelphia: Lea & Febiger.* 1930. *Price* $5.50.

This practical instructor will be especially welcomed by the physician who is desirous of starting or has recently started making his own roentgen-ray examinations. The author states: "All books on roentgenographic technique are either obsolescent or incomplete in some particular"; consequently, this manual definitely limits itself to the subject of technic. Every particular essential to practical and manipulative understanding of the roentgen-ray machine; dark room equipment and technic; prevention of hazards; detection and correction of the many possible sources of annoying interruptions to service; all these, and innumerable other items which comprise the triple procedure of exposure, development and interpretation of films, are explained to the satisfaction of the most exigent enquirer. Valuable, to both neophyte and expert, is the series of experiments whereby one may evolve a perfected method of exposure which may be adaptively employed by any roentgen-ray operator, irrespective of the particular apparatus he may use.

J. E. G. W.

Jellinek: Accidents Due to Electric Currents

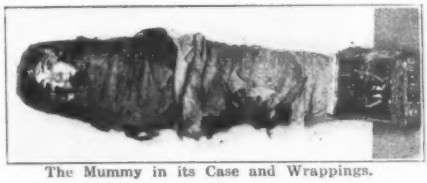
DER ELEKTRISCHE UNFALL; Skizziert Für Ingenieur und Arzt. *Von Dr. Stefan Jellinek, A.O. Professor Der Elektropathologie an der Universität; Honorardozent an der technischen Hochschule in Wien. Mit 50 Textabbildungen. Dritte, vermehrte Auflage. Leipzig und Wien: Franz Deuticke.* 1931. *Price* M 8.— *geb.* M 10.—, S 12.— *geb.* S. 15.—.

For many years Professor Jellinek of Vienna has been recognized as an authority on the subject of the pathology arising from electric shocks and burns. His monograph, of which this is the third edition, deals with the various aspects of this subject, and those interested and who read German will find much first hand authoritative information in it.

NEWS NOTES

A Delayed Autopsy

An x-ray study of the head of a boy about six years old revealed, according to the roentgenologist's report, a fracture of the skull and of the mandible, with the dislocation of one of the teeth. The nature of the injuries suggested that they were produced by a club or some similar weapon, rather than by a fall or other common accident.



The Mummy in its Case and Wrappings.

The police are powerless and there seems no way of apprehending the criminal or criminals, as the poor boy was done to death in ancient Egypt, 3,000 years ago, the x-ray studies having been made recently, upon his mummy.

Roentgenogram of Head in Case, Showing Evidences of an Ancient Crime.

The accompanying pictures show some of the interesting things the roentgenologists of the Westinghouse X-Ray Company are doing these days.

THE · SEMINAR

CONDUCTED BY
MAX THOREK, M.D. (*Surgery*)
GEORGE B. LAKE, M.D. (*Medicine, Ethics and Economics*)

[NOTE: Our readers are cordially invited to submit fully worked up problems to the *Seminar* and to take part in the discussion of any or all problems submitted.

Discussions should reach this office *not later* than the 1st of the month following the appearance of the problem.

Address all communications intended for this department to *The Seminar*, care CLINICAL MEDICINE AND SURGERY, North Chicago, Ill.]

PROBLEM NO. 5 (ETHICS)

Submitted by Dr. E. M. Cunningham, Cassopolis, Mich.

(See CLIN. MED. AND SURG., May, 1931, p. 353)

Recapitulation: A widely known physician and specialist, from a clinic of international renown, recently made an address before a convention of optometrists.

Optometrists are, as a rule, very active advertisers, frequently stressing the point that they "use no harmful drops or drugs" in examining the eyes.

Requirement: Is it strictly ethical for a prominent physician to identify himself in this manner with such a group of people?

DISCUSSION BY DR. FRANK W. PORTERFIELD, WATERLOO, IOWA

An optometrist is one who practices optometry—the measuring of visual acuity and the fitting of glasses for visual defects. It is difficult, indeed, to understand how the garments that clothe the ethical fanatic could be tarnished by a consideration of the mechanics of refractive error and the simpler methods of recognizing such errors, by either the physician or his patient; even the fundamentals of this subject, if explained to most physicians in general practice, might be the means of enabling them to avoid mistakes in diagnosis which, if made, could easily cause their patients much annoyance and even suffering and impose much unnecessary expense.

The profession of medicine needs, today, to get abreast of the marvelous advances made in other branches of human activities; to broaden out; to condemn nothing until an impartial and skilful, as well as reliable, analysis shall prove, beyond question, its lack of worth. There are many truths not found in our standard textbooks nor taught in our colleges.

We have a duty to perform to every patient who trusts his health and his life to us, and that is to do those things for him which will preserve his life at its longest and its best, by means of any agencies which our experiences have taught us it can be most certainly achieved. I have a suspicion that some of us do not do this so well as others might. The time spent in studying and learning what these others would do, if in our place, would, in my opinion, be more profitably spent than in picking the ethical mote out of our brothers' eyes.

DISCUSSION BY DR. G. M. RUSSELL, BILLINGS, MONT.

We have men in the regular profession of medicine who have made a special study of the eye and are perfectly competent to refract, probably with more accuracy than it can be done by any optometrist.

While optometrists may not be considered "irregulars" or in the same class with cultists, it is certainly as inconsistent for a physician to consort with them as it would

be to associate intimately with osteopaths and chiropractors, who are at present adopting methods of treatment strictly belonging to us. Why bolster up and encourage the factors that are enticing our work away from us?

Presumably there is no provision in the code of ethics, imposing a penalty for communion with para-medical associations, but a physician with a sense of judicious propriety would abstain from any such contact.

Discussion by Dr. Emil C. Junger, Soldier, Ia.

Once upon a time, a Great Teacher spoke about a certain Kingdom being like a leaven which, when put into a measure of meal, leaveneth the whole lump.

If the specialist mentioned in this problem was not of the "holier than thou" type, he could do much good by mingling with those optometrists and giving them a few counsels of real truth. He could be a missionary to those people and win them to better practices.

If we have any truth in our profession, let us shout it from the housetops, and leave the result with the public.

Closing Discussion by Dr. Geo. B. Lake, Chicago

The optometrist is scarcely in the class with the osteopath and the chiropractor, who are competing directly with the physician, for all types of practice. Few practitioners have the equipment, time and inclination to do a good refraction and prescribe lenses intelligently.

The trained ophthalmologist is, of course, the ideal man to do this work, but his fees must, necessarily, be so high as to place his services beyond the reach of many who need lenses, but whose eyes are, otherwise, entirely normal, so that a competent optometrist is able to deal adequately with the situation.

Dr. Porterfield seems not quite to have seen the nub of the problem, though his remarks merit serious consideration. The prominent physician did not go to the optometrists to learn, but to teach.

Dr. Russell expresses the rather narrow and literal interpretation of the unwritten code of medical ethics which, I hope, we are about to leave behind; while Dr. Junger looks upon the matter from the larger, humanitarian aspect.

Personally, I feel that, as things now stand, there is a definite place in our scheme for the conscientious and well-trained optometrist, without any interference with the work and the living of the physician. And if the optometrists in any particular neighborhood are not sincere and able, are not the physicians of that locality partly to blame, if they have failed to teach them when opportunity arose?

My own idea is that the optometrists are not, as a rule, our direct competitors and have come to stay; that they do not think of themselves as medical men, and hence are open to suggestion and instruction from the doctors of medicine; and that we can serve a valuable purpose by instructing them how to recognize a case which requires the use of a midriatic and, especially, one in which some ocular *disease*, entirely beyond their scope, is present, so that such patients can immediately be referred to an ophthalmologist for the necessary study and treatment.

I feel, then, that the physician who spoke before a group of optometrists was entirely within the pale of the *spirit* of medical ethics—providing, of course, that his talk was along constructive and enlightening lines—and that activities of this sort should be encouraged, rather than frowned upon.

Problem No. 7 (Medical)

Adapted From a Clinico-Pathologic Conference

By Richard Cabot, Boston*

The patient, an Irish-American of 52 years, entered the hospital Feb. 8, complaining of collapse.

Family History: His mother died of "bronchitis." His wife had had one miscarriage and lost one child at birth.

Personal History: His health had always been excellent, except that, twelve years before, he had an attack of "neuritis" in the legs, lasting for five or six weeks, for which his teeth were extracted. At that time the records showed enlarged submaxillary lymph nodes; cardiac extra systoles, giving a trigeminal pulse; and traces of albumin and sugar in the urine. For years he had been in the habit of drinking six glasses of whiskey and six of beer daily, and had occasional attacks of heartburn and gas, but rarely vomited. His usual weight was 146 lbs.

*Presented before the American College of Physicians, at Massachusetts General Hospital, Boston, April, 1929.

Present Illness: He was a laborer in a printing establishment, where his work was heavy and the air was full of lead dust. He took a cathartic every week to avoid colic, which was rather common among the other workers.

Two days before admission he suddenly became weak and faint and had a sense of compression in the upper chest, with moderately severe pain, radiating to both shoulders and down the left arm, profuse sweating and nausea, which was somewhat relieved by vomiting. He went back to work, but soon had another attack and nearly collapsed. The company physician took him home, gave him a hypodermic injection of morphine and ordered him to bed. On admission to the hospital his only discomfort was sharp precordial pain, worse on moving or coughing.

Physical Examination: Weight, 150 lbs.; *heart* slightly enlarged, sounds faint, second sound heard only at pulmonic area and to the left of the sternum in the second and third interspaces, in which region the first sound was very harsh and rough; pulse, 100, of low tension and feeble; temperature, normal; blood pressure, 105/85; *electrocardiogram* showed normal rhythm; wide, slurred QRS waves in all leads; intraventricular block and inverted T_1. The chest, abdomen and all other tests were normal, except that the edge of the liver was two fingerbreadths below the costal margin and slightly tender.

Laboratory Tests: *Urine*: *sp. grav.*, 1.025; very slight trace of albumin; rare leukocytes. *Blood*: Leukocytes, 13,750, with 77 percent polymorphonuclears; red cells, 4,970,000; hemoglobin, 85 percent; slight anisocytosis and poikilocytosis; no achromia nor strippling; platelets, normal; blood-sugar, 108 mgm.; Hinton test (for syphilis), negative.

Progress: The patient was largely free from symptoms, but lay on his left side. The cardiac gallop rhythm continued. On Feb. 12 and for several days thereafter, he was mildly delirious. From Feb. 17 to March 2 his temperature was normal, but he had several attacks of mild dyspnea daily, with squeaks in the lungs. On Feb. 21, another electrocardiogram showed intraventricular block, QRS_{II}, inverted T_I, diphasic T_{II} and T_{III}. On March 1 he began to have precordial discomfort with severe dyspnea. The heart action was very rapid, the rhythm regular and the sounds poor in quality (best described as "pitter-patter"); many beats did not come through to the wrists. Electrocardiogram showed premature auricular beats (bigeminy); rate, 130 to 140; PR interval, 0.24 second; auriculoventricular and intraventricular block. There was no evidence of edema at the lung bases or elsewhere. On March 6 he died.

Requirement: Discuss case and suggest diagnosis.

A Student of Truth

For myself, I found that I was fitted for nothing so well as for the study of Truth; as having a mind nimble and versatile enough to catch the resemblances of things (which is the chief point), and at the same time steady enough to fix and distinguish their subtler differences; as being gifted by nature with desire to seek, patience to doubt, fondness to meditate, slowness to assert, readiness to consider, carefulness to dispose and set in order; and as being a man that neither affects what is new nor admires what is old, and that hates every kind of imposture. So I thought my nature had a kind of familiarity and relationship with Truth—Francis Bacon.

Health and Happiness

With health, everything is a source of pleasure; without it, nothing else, whatever it may be, is enjoyable. It follows that the greatest of follies is to sacrifice health for any other kind of happiness, whatever it may be—for gain, advancement, learning or fame, let alone, then, for fleeting, sensual pleasures.—Schopenhauer.

THE · CLINIC

RADIOLOGY

Carcinoma and Uterine Myoma*

By Henry Schmitz, M.D., Chicago

Carcinoma of the Breast

CASE 1: Mrs. F. F.; age 41; married 3½ years; widowed 15 years; 2-gravida; 1-para; stenographer.

Presenting symptoms: A lump in the right breast, which has been present for two years, has gradually increased in size during the last three months. There has never been any escape of blood from the nipple. There is no history of injury of the breast. The patient does not complain of pain, feels otherwise perfectly well and has gained 35 pounds in weight during the last five years.

The *family* history is negative as to carcinoma, tuberculosis and syphilis.

The *past history* is not of any import. Interrogation by systems does not reveal any evidence of functional or organic disturbances.

Menstrual history: Puberty occurred at 14; periodicity was always shortened or prolonged, but of late years has been 30 days. The duration is two days; the amount was never profuse. Patient had dysmenorrhea up to three years ago. There is no history of leukorrhea, menorrhagia or metrorrhagia.

Marital history: The patient was married and lived with her husband for 3½ years; has been widowed for 15 years. One full-term labor occurred 17 years ago. Delivery was normal; the weight of the child was 8½ pounds; the puerperium was afebrile; the lactation period was 13 months; there is no history of infection of the breast.

Examination of right breast revealed an irregular mass, about 8x6x4 cm., in the upper inner quadrant. The mass was irregular, firm, invading the neighboring tissue, but was movable with the breast when the patient's arm was held up. Regional lymphnodes were not palpable. There was pitting of the skin above the tumor mass, with attachment of skin to the tumor.

The weight of the patient was 180 pounds; the height, 5 feet 6 inches; the blood pressure, 120/80.

The *clinical diagnosis* was carcinoma, primary, Group 3.

The *operation* consisted in the sacrifice of a large area of skin, the incision being made 3 cm. distant from the palpable periphery of the tumor. The breast, the pectoralis muscles, the deep fascia and the entire fat and gland tissue of the axilla were removed in one mass. The anterior and apical axillary glands were pea-sized.

The *microscopic examination* revealed an alveolar carcinoma, with metastasis to the regional and apical axillary lymphnodes and invasion of the pectoral muscle.

Comments: The patient made an uneventful recovery. The wound, which was left partially open, healed gradually. A full course of short-wave x-ray therapy was given to three fields; namely, the right shoulder and neck region; the right anterior chest and axillary region; and the posterior chest region. The factors were: 170 Kv.; 65 cm. focus skin distance; field size as indicated, 20x25 cm.; 0.5 mm. copper plus 1.0 mm. aluminum filter. About 1200 R were applied to each area, in five

*A clinic at Mercy Hospital, February 16, 1931.

interval applications, from February 21 to March 12.

The clinical extent of the mammary cancer (a growing tumor; an extension into the corium and pectoralis muscle; invasion of the axillary lymphnodes with mobility of all of the tumor mass) placed the carcinoma in Clinical Group 3. Such carcinomas indicate radical, extended mammectomy, followed by radiation. Should such cases pass a five-year period free from a recurrence, the good end-results should be attributed to postoperative radiation. Without radiation therapy, recurrences take place almost invariably.

Myoma Uteri

Case 2: Mrs. O. B.; age 45; married 15 years; 2-gravida; 2-para; was referred to the clinic on account of a palpable, suprapubic mass, which the patient noticed only recently. The menstrual flow has gradually increased in duration and amount. The flow lasted only two days, up to two years ago, and now lasts seven days. The amount was always normal, but now it is so profuse, for the first two or three days, that the patient has become alarmed.

Her father died from carcinoma of the throat and her mother and two sisters have myomas of the uterus.

Examination revealed a uterus about the size of a 12-weeks-pregnant organ, the increase in size being caused by a large, round, firm myoma, in the posterior wall of the uterus.

The *treatment* consisted in a diagnostic curettage, which did not reveal a hyperplasia of the endometrium or submucous myomas. The uterine canal was 14 cm. long. A brass filter, 14 cm. long, of a wall-thickness of 2 mm. and containing fifty milligrams of radium element, was inserted into the uterus and left in place for 24 hours.

Subsequent observation: The patient menstruated from March 22 to March 29, the flow being very profuse. Since then she has had amenorrhea.

Comment: The indications for radium treatment are: the myoma (1) should bleed; (2) be free from degeneration; (3) be uncomplicated with other pelvic lesions; (4) be not larger than a 12-weeks-pregnant uterus; (5) be located intramurally; (6) there should be no doubt in the doctor's mind about these factors; and (7) the patient should be 35 years old or older.

A myoma causing pressure; having a history of sudden and rapid growth, with alarming increase in the hemorrhages; located subserously, submucously or intracervically; occurring in women of less than 35 years; accompanied by other pelvic lesions and of a size of a second-trimester pregnant uterus, indicates surgical treatment.

A diagnostic curettage should always precede radiation therapy, to exclude malignant disease and to determine, eventually, a submucous location. If one wishes to avoid the watery discharge following intrauterine radium application, x-rays may be used.

Case 3: Mrs. J. C.; age 44; married 19 years; 2-gravida; 2-para, enters the clinic with the presenting symptoms of menorrhagia of several years duration, for the relief of which a curettage was done two years ago. The flow, at present, is alarmingly profuse and lasts 8 to 10 days. Four days ago an obstruction to urination occurred; since then she has an ischuria. The *examination* revealed a tumor connected with the uterus, filling out the true pelvis and pressing the urethra against the symphysis pubis.

At operation, a pedunculated tumor was found to have been expelled from the uterus and to fill out the true pelvis. The tumor was removed by morcellement; the curettage did not produce endometrium; nor was another tumor found. Fifty (50) milligrams of radium element were inserted for 24 hours, filtered with 2 mm. of brass.

The tumor was 10 cm. in diameter and was cystic and necrotic in places. The microscopic examination revealed an infected, pedunculated, submucous fibromyoma.

The patient had a profuse menstruation on March 3, which lasted 4 days. Since then she is amenorrheic and the uterus and cervix have undergone complete involution.

Perhaps the insertion of radium may have been unnecessary. However, the age of the patient and the expected early menopause justify such a treatment.

Carcinoma of the Uterine Cervix

Case 4: Mrs. C. S.; age 37; married 16 years; 6-gravida; 6-para, enters the clinic on account of metrorrhagia, contact bleeding and leukorrhea of three months' duration. A biopsy was made two weeks ago at another hospital and the histologic report was a precarcinomatous lesion.

Examination revealed a deep transverse

laceration, with erosion, ectropion and ulceration in left lateral cervix, Chrobak's sign was absent. The uterus was normally movable.

The *diagnosis* was an early carcinoma.

The *treatment* consisted in a high amputation of the cervix, so that serial sections of the entire cervix could be made. Frozen tissue section examination shows an adenocanthoma, with a high degree of glandular hyperplasia, marked eosinophilia and infiltration of the muscular layer. Fifty (50) milligrams radium element, filtered with 2 mm. of brass, were inserted intracervically for 30 hours. The same dose was repeated twice, at 8-day intervals, and short-wave x-ray therapy was given through two fields, each of 300 square centimeters; 1200 R to each field; with 200 Kv.; 65 cm. focus skin distance; 0.75 mm. copper and 1.0 mm. aluminum filter; divided in five interval applications, a seance given to each field every third day.

Case 5: Mrs. M. J.; age 58 years; married 38 years; 8-gravida and 8-para, was admitted to the hospital on account of bleeding, discharge and distress deep in the pelvis.

The patient had been treated in this clinic in December, 1928. At that time she had been bleeding for four weeks. *Examination* showed a large, irregular, firm cervix, bleeding freely on contact. The uterus had limited mobility, was anteverted and of normal size. The left parametrium was irregularly indurated. A radiation treatment was given. The patient did not return for a re-examination. Microscopic examination showed a round-cell carcinoma, with marked irregularity in the size of cells and nuclei.

The *second examination* revealed an irregularly-infiltrated, ulcerated vaginal mucosa, with infiltrated left parametrium with fixation. Radium was inserted three times, at eight-day intervals, using a 3 mm. lead filter; the combined dose was 4500 milligram-element hours. The microscopic diagnosis was *solid, squamous-cell carcinoma.*

The patient at present feels subjectively well.

The outstanding facts in this case are that, at the first treatment, the patient received only 3000 milligram-element hours of radium treatment. I have never observed a carcinoma of the uterine cervix that was treated with 5000 milligram-element hours of radium, and that afterwards showed carcinoma. Hence the local recurrence after two years was due to a sublethal radium-carcinoma dose.

The reason for the use of a 3 mm. lead filter at the last treatment was to apply a massive radium dose, but avoid destruction of the vaginal mucosa. It also appears that a recurrence will react to a repeated radiation if a heavier lead filter is used.

Some time ago a patient who had been treated on the Pacific Coast, with 3000 mg. radium-element hours, for a carcinoma of the cervix, appeared at the clinic six months later. The carcinoma was very active, and radium with a brass filter did not help at all. A lead filter was then used and the patient has remained free from carcinoma, so far, for more than two years.

Carcinoma of the Uterine Body

Case 6: Mrs. A. B.; age 38 years; never pregnant, was referred to our service on account of an excruciating pain in the left pelvic region, which began two years ago, and bleeding from the vagina for the last two months.

Eighteen months ago the patient was subjected to a bilateral salpingo-oophorectomy, on account of pain and bleeding, at another hospital. However, the pain was not relieved but grew increasingly worse, so that the patient was confined to bed. She now uses 3 grains of morphine daily. Amenorrhea followed the operation.

Examination reveals a large, fixed uterus, enlarged in the cervical portion, with induration of the entire vaginal mucosa, left parametrium and left inguinal and femoral lymphnodes.

Treatment consisted of short-wave x-rays and gradual withdrawal of the morphine. Relief from pain has been rather pronounced and today an application of radium, intrauterine and intravaginal, was made, to arrest the bleeding and the cadaveric discharge. Of course the case is beyond help and probably our efforts will be for naught.

(*Note*: The patient succumbed to progressive asthenia, April 4, 1931.)

Carcinoma of the Ovaries

Case 7: Mrs. A. R.; age 38 years; married 10 years; 3-gravida; 3-para, was referred on account of a distension of the abdomen of one month's duration and a yellowish-brown discharge of two months' duration.

(Continued on page 513)

CLINICAL · NOTES AND PRACTICAL · SUGGESTIONS

Ectopic Pregnancy Complicated by Acute Appendicitis*

MRS. M. S., a white, American, female, age 26 years, became ill on December 12. At this time she was severely nauseated and, thinking to relieve herself, took a large dose of milk of magnesia. On the 13th she felt better but was still somewhat nauseated. On the morning of the 14th her nausea was worse again and she decided to have medical advice, so came into the office.

There are no points of interest or relation in the family history.

The patient's past personal history includes the usual childhood diseases. In the past few years she has had two or three attacks of pain in the right lower abdominal quadrant, which have been diagnosed as attacks of appendicitis. She states that during the past few months she has frequently had a twinge of pain in the right lower quadrant when walking along the street. These pains have been very sharp and knife-like in character. At all times during these past few months, pressure in the region of McBurney's point has demonstrated a tender spot. She has felt "draggy" and lacked "pep" during this period.

The menstrual periods began at the age of 12 and were quite irregular until within the past few years. The interval is now usually from 28 to 32 days and the flow lasts from 4 to 5 days. She usually has slight dysmenorrhea. She has been married five years and has never been pregnant. She spends two days each week as a bookkeeper and the rest of her time is given over to her housework.

On the day of her initial visit she complained of severe nausea and stated that her menstrual period was now 10 days past due. She presented the picture of a rather obese young female about 25 years of age. She is approximately 5 feet in height and weighs about 148 pounds. At this time there was some rigidity of the right rectus, that gave one the impression of a mass in the right lower quadrant. There was some tenderness over McBurney's point. The pulse was 100 and the temperature was 99°F. A bimanual examination was not made. A diagnosis of appendicitis was offered and surgery was advised and refused.

The patient returned home and was next heard from on the night of the 15th. A visit to her home at this time found her in a condition somewhat more aggravated than on the preceding day. The temperature still remained 99° and the pulse 100. A bimanual examination revealed a small mass in the right adnexa. A diagnosis of ectopic pregnancy was made and surgery again advised.

She was removed to the hospital and operated upon immediately after her admission. Under sodium amytal (intravenously, 6 grains) and ether, a right paramedian, muscle-displacing incision was made. The opening of the peritoneum permitted the escape of a moderate quantity of dark-straw-colored fluid. The ectopic mass protruded at once into the field of exposure. It was approximately 7.5 cm. in

*Presented at the January 13, 1931, meeting of the Indianapolis Medical Society, Indianapolis, Indiana.

diameter, very tense and of a dark, cyanotic color. The outer layer was extremely necrotic and tore upon the slightest manipulation. This sac was attached to the posterior wall of the broad ligament and was matted together with the tube and ovary into one inflammatory mass. The tube, ovary and ectopic sac were removed en masse.

The appendix was large, inflamed, and the tip was bulbous and hard. It was removed and the stump was not inverted. Penrose drains were placed about the head of the cecum and in the posterior cul-de-sac. The patient was returned to her bed in good condition. The first 48 hours were rather stormy, but following that her convalescence was uneventful and she was discharged from the hospital on the 15th day. Her recovery is now complete.

The ectopic sac was opened later and a fetus about 12 mm. in length was demonstrated. The appendix was opened and disclosed three distinct areas of necrosis that had extended almost to perforation.

This case is reported, not because either appendicitis or ectopic pregnancy is rare, but because a case presenting the two conditions, existing in the same patient simultaneously, does not come to operation every day.

DRS. C. F. and J. M. KERCHEVAL.
Indianapolis, Ind.

How French Physicians and Dentists Met the Insurance Question*

AS THIS is written, France is the latest great nation to adopt an extensive system of compulsory health insurance, involving all branches of the medical profession. This law went into effect October 1, 1930, but it had long been under consideration.

When Alsace and Lorraine returned to France they brought back the German system of health insurance. In spite of the admitted defects of the German system, there was a demand that health insurance be now extended to all of France. The first law passed in 1928, being largely copied from the German scheme, was so full of defects that it raised a storm of protest, particularly from the medical professions.

When the government suspended its operation, this gave an opportunity for a complete rewriting. The physicians and dentists, as often under similar conditions, had been caught largely unprepared, but they now got busy in earnest and to excellent effect.

The physicians raised a fund of over one million francs (about $40,000), set about a thorough analysis of insurance, formulated their demands and adopted them at a great mass meeting and then carefully laid out a campaign, which they carried through to a successful conclusion, to secure these demands.

Since the dentists were included in the law from the beginning, they joined with the physicians in support of the latter's demands and then formulated their own program.

Such a fight calls for a strong professional association. The French dental profession is divided into stomatologists and dentists, with different educational standards, which previously had made common effort difficult. How the emergency caused them to forget their differences is reflected in these words, taken from a circular issued by the stomatologists.

"It is necessary for every practitioner thoroughly to realize that any mistakes made now will govern our destinies in the years to come. . . . It is of paramount importance at this moment that the individualistic spirit in medicine give way to the collective spirit, which alone will permit some defense against the collectivities that are confronting us."

There was a dentist and a physician who were members of the Chamber of Deputies. From the beginning each of these worked, both within and without the chamber, to push the following proposals of the medical professions:

1.—Complete freedom of choice of practitioner.

2.—Legitimization of all professional associations entitled to deal with the insurance societies by the national association of the profession.

3.—Direct payment of all fees.

4.—Professional representation on all administrative bodies.

5.—Complete safeguarding of professional secrecy.

6.—No lay control of professional activities.

Every one of these provisions was written into the law.

The patient brings to his physician or dentist a letter of introduction from his insurance society. The work is performed; the customary fee charged and paid; the

*From *Bul. Chicago Dent. Soc.*, Feb. 5, 1931.

physician or dentist then endorses the work done upon the letter, which the patient takes to his insurance society and collects the amount due him, which in most cases is only a part of the fee. For prosthetic work the insurance society must first endorse the estimate of the dentist as to the cost.

There are representatives of the medical profession, not only on every administrative body, but even on the governing committees of the insurance societies.

Although the insurance societies had more than six million members, nearly all voters, the medical professions, purely by virtue of organization, superior knowledge of the situation, and a well planned campaign won a victory so complete that their German confreres have enviously congratulated them on escaping the evils of the German system. This victory was so complete that instead of the enactment of the law being followed by "doctors' strikes," as in other countries, the insurance societies "struck" in many places and refused to sign the uniform contracts presented by the medical professions in accordance with the law.

It may have been a trifle too complete a victory, since the insurance societies are now beseeching the politicians to amend the law to take away some of the advantages gained by the physicians and the dentists. Whatever may be the outcome of this prospective fight, the medical professions will, at least, for the first time, have the advantage which the societies have had under every other system, in that they will be in possession of the disputed territory and know exactly how to battle for their professional privileges.

H. E. PHILLIPS, D.D.S.,
Chairman, Committee on the Study of Dental Practice.

Chicago, Ill.

Piña Mestre Hernia Injection

IN THE March, 1931, issue of CLINICAL MEDICINE AND SURGERY, page 172, we published an article on the injection treatment of hernia, according to the method of Piña Mestre, of Barcelona, Spain, by Dr. F. Slater Jameson, of Newark, N. J.

We had every reason to rely upon the integrity of Dr. Jameson and his good faith in writing the article, but soon after its appearance we began to receive letters and other information, which led us to believe that the method is not especially reliable; that the solution used (though we published its formula) is, because of the difficulty in procuring some of its ingredients, practically a proprietary remedy, obtainable only from Piña Mestre and his representatives; and that it has no advantages over the readily obtainable solution for this purpose, recommended by Dr. Ignatz Mayer, of Detroit.

We wrote to Dr. Jameson, setting this information before him, but have received no reply to that or subsequent letters, some of which have been returned with the statement that he is not at the address given and cannot be found. Others have reported similar experiences.

We are therefore taking this opportunity to warn our readers that we believe Dr. Jameson did not write the article mentioned in good faith and that the effectiveness of the Piña Mestre solution is, in our minds, open to serious question.

With the best intentions and efforts, an editor cannot be absolutely sure of the soundness of every article he publishes, and the best he can do is to warn his readers when he finds that an error of this sort has been made.—EDITOR.

Nembutal in Strychnine Poisoning

MY *POLICE* dog, weighing 60 lbs., was discovered in a drive way, in the first stages of tetany of strychnine poisoning. I immediately gave him 7½ grains (0.5 Gm.) of Nembutal, in 10 cc. of sterile distilled water, intraperitoneally, and relaxation was evident in fifteen minutes. In one hour the dog showed signs of excitement and another 7½ grain dose was given, intraperitoneally. About two hours later I gave him apomorphine, which emptied the stomach and, as the dog showed signs of tetany again, I gave him another 7½ grains of Nembutal, subcutaneously.

Eight hours later (the next morning), the dog showed some improvement, but still showed signs of being very sensitive. I therefore gave him 4 grains of Nembutal, orally, and relaxation was immediate. At noon, the same day, I gave him water and milk and 3 grains more of Nembutal, orally. By evening all signs of strychnine sensitiveness had passed off and the dog appeared much improved. The next morning he took food and recovery was uneventful.

In treating strychnine poisoning, there is no way to determine the dosage of Nembutal, except by the severity of the convulsions. In one instance the dog had one convulsion which stopped respiration for at least two minutes, but artificial respiration and the efficient, rapid action of Nembutal stopped the convulsion and produced recovery.

E. E. SWEEBE, D.V.M.
Waukegan, Ill.

[Since animals, especially dogs, are used for testing most pharmaceutical products, it seems reasonable to assume that a drug which will benefit a dog in a certain condition may be useful in treating a human being similarly affected.

The symptoms of strychnine poisoning are agonizing to the patient, who retains full consciousness, and anything which will relieve them is worth trying, as an emergency remedy.

The dose given seems large, but as it was used as an antidote, the indication was to *give enough*. It might be a good idea to carry a supply of Nembutal in the emergency bag and try it in this and similar conditions, adjusting the dosage to the patient and the circumstances.—ED.]

Psittacosis, or Parrot Fever

PSITTACOSIS, or parrot fever, is primarily a disease of birds, which can be conveyed to persons through more or less intimate contact with recently imported infected parrots, and sometimes by parrakeets, love birds, canaries and possibly other tropical species. It is, therefore, of especial interest to all bird fanciers.

The symptoms of the disease in birds are not sufficiently characteristic to be diagnostic; hence, the disease in them is usually detected only after one or more human cases of parrot fever have resulted. The birds which usually are responsible for the human cases are those which have been imported recently and usually they also show signs of illness, such as loss of appetite, roughing of feathers and sometimes cough and diarrhea, although occasionally birds apparently well have served to infect persons as long as eight months after importation. The facility with which the disease is spread from infected birds to man makes it one of the most highly contagious diseases known.

Infected persons usually become sick in from 6 to 15 days following exposure and have symptoms suggesting influenza. The onset is sudden, with chilly feeling, intense headache and fever. A peculiar type of localized pneumonia soon develops. It is largely upon the extent of this pneumonia and the age of the patient that the outcome of the disease depends; it is especially dangerous in persons over 60 years old. In mild cases, the initial pneumonia ceases to spread and the fever and other symptoms tend to disappear after eight to ten days. In severe cases, however, the lung becomes progressively more and more involved, and unless the process can be checked, death will result, usually in the third week of the disease. When recovery sets in, the physician must guard his patient from getting about too soon, as relapses during the weeks immediately following the return of the temperature to normal occur not infrequently, though they tend to be milder than the original attack.

Psittacosis of man has been reported for the United States in 1904, 1906, 1925 and 1927. The 1929-1930 outbreak is, however, by far the most extensive yet reported for the United States. Nevertheless, it seems certain that this outbreak would largely have escaped detection as to its real nature had not the press brought the condition and its striking association with parrots before the public and the medical profession.

The records of the Public Health Service indicate that there were 74 places of infection, which gave rise to 169 cases with 33 deaths from November 23, 1929, to May 7, 1930. These cases occurred in 15 States and the District of Columbia, and do not include 16 laboratory infections with 2 deaths, or 12 probable cases which were moved from two merchant ships entering ports of the United States following exposure aboard ship to parrots purchased abroad.

U. S. PUBLIC HEALTH SERVICE.
Washington, D. C.

Injection Treatment of Hernia

UNFAVORABLE comments on the injection treatment of hernia are frequently heard, but, from my own favorable experience with this method and from good results I have frequently observed in the hands of others, I am convinced that the

trouble lies with those physicians who have taken up the use of the injection treatment, with an eye upon financial returns rather than upon clinical results, and have neglected to familiarize themselves with and *invariably* to use the rather rigid technic which is essential to success.

I have worked upon the professional and scientific sides of this method for several years and, in spite of the opposition encountered (which seems invariably to be aroused by the presentation of a new idea), my results have been highly satisfying, to the patient, as well as to the surgeon, so that I feel sure that, when it is carried out with intelligence and strict attention to detail, there will be no cause for complaint.

J. CANTALA, M.D.,

New York City.

Arguments to Obtain Autopsies*

IT IS extremely important for a doctor or other person securing permission for an autopsy, first to be absolutely convinced of its value as well as of the honesty of his request of the parents or guardian to allow a post-mortem examination of the deceased patient.

Establish what might be termed "*entente cordiale*" with that member of the family who, in the event of death, is legally authorized to give permission. This has frequently resulted in securing permission before death in the case of hopeless, incurable patients. Parents who at first seem bitterly opposed to a post-mortem examination, will themselves request one when the case is properly presented. Be courteous at all times to the relatives. Answer their questions. Ask for an autopsy in every case of death, for it is only by repeated autopsies that pathology can make progress. So far as possible, do not overemphasize the word "post-mortem," which implies a morbid state, but rather consider a post-mortem examination as surgery on the patient who has ceased to breathe.

Get the family from the bedside at death. Talk to the family or the responsible relative in a private, quiet room, free from confusion. A close relative, when most keenly affected and grieved by the death of one most near and dear, is at that moment more willing to consent than at any other time. Later consideration or subsequent discussion with others almost invariably results in refusal. By all means make every effort to obtain the permission before the undertaker has been employed.

If you fail to obtain permission for a complete examination, try at least to get permission for examination of the organ especially involved. The pathologist will honorably respect any limitation of the examination, provided he is informed of such limitation before the examination has been started.

Arguments vary with each case. The one appeal that has had most success is that based on the good which may at some time accrue to someone else. Death seems to awaken a sudden outpouring of unselfishness. The presentation of the scientific side, with its addition to medical knowledge, is often less successful. We believe, however, that patients seek recognized physicians who are better than their fellows often because they are more familiar with disease, partly because of experience derived from post-mortem examinations.

When a question arises regarding a life insurance policy, an easy argument is obtained by the inability of the physician to sign the paper without the knowledge of the exact cause of death. This occasionally applies to the death certificate itself, although the board of health is, unfortunately, lenient enough to render this argument a rather weak one.

Assure the relatives that the matter is entirely for them to decide. We do not desire to examine a body against their persistent, sincere wishes. The examination is done as carefully as an operation. There will be no visible mutilation of the body, that is, our examination will not effect the appearance of the body when prepared for burial. Inform them that they will be informed of the autopsy findings, so that they may know the exact cause of death, if they so desire.

This examination may discover the presence of inheritable disease and be helpful in saving the lives of others in the family. It is practically never advisable for an intimate member of the family to be present at the autopsy. You would not want to be present at the examination of your own child. It is not advisable for the parents to see their child until after the undertaker has prepared it for burial.

WILLIAM G. HIBBS,

Chicago, Ill.

*Adapted from *Bul. Chicago Hosp. Assn.*, March, 1931.

Prescriptions Commonly Used in Eye Conditions*

THE prescription is the crack at the end of our therapeutic whip. Its skillful application measures the effectiveness of our effort to combat the symptoms or pathologic conditions in our patient.

So far as the eye is concerned, the list of drugs prescribed for eye conditions need not be long. It is necessary to have at hand a reliable *mydriatic*, a reliable *miotic*, and a short list of drugs which may be used as *collyria*.

The most reliable mydriatic is atropine—first, last and all the time. In prescribing atropine it must be remembered that children do not bear it well in large doses and, when prescribing for them, the early symptoms of poisoning must be constantly kept in mind. In infants, the dilatation obtained is always less than in children or adults, and there are infants in whom it dilates the pupil very slightly, even when used in poisonous doses. Its long continued use may lead to an atropine conjunctivitis. It is ordinarily prescribed in a one-percent solution for adults and children over ten.

℞ Atropine Sulphate 0.15
Distilled Water 15.00

Label: Drop in (affected) eye three times a day.

For an effective mydriatic of more transient action:

℞ Cocaine Hydrochloride 0.30
Homatropine Hydrobromide 0.30
Distilled Water 15.00

Label: Drop in eyes every 15 minutes until dilatation required is obtained.

For transient mydriasis, which may be promptly overcome by instilling a one-percent solution of pilocarpine, one may use:

℞ Euphthalmine 0.30
Distilled Water 15.00

Label: Drop in eyes every 15 minutes until dilatation required is obtained.

Our two most effective miotics are eserine for energetic action and pilocarpine for more moderate action.

℞ Eserine Salicylate 0.03
Boric Acid 0.30
Distilled Water 15.00

Label: Instill in (affected) eye every half-hour (until effect desired is obtained).

If patient is under the direct observation of the physician, the eserine in the above prescription may be increased to 0.15.

℞ Pilocarpine nitrate 0.15
Distilled Water 15.00

Label: One drop in eye three times a day.

Of the collyria, the popular use of boric acid in solution as an eye wash and as an instillation should be encouraged rather than discouraged. Such a solution is mildly antiseptic, it has unquestioned therapeutic value, and it is entirely safe, there being no possibility of an overdose or of getting the solution too strong.

A simple solution which may be used freely in the eyes and which probably has all the medicinal value of any of the widely advertised wonder curealls, is the following:

℞ Boric Acid 0.30
Camphor Water.
Distilled Water, of each.....15.00

Label: Drop in the eyes as directed.

Where a mild astringent is required and one which is curative in diplobacillary conjunctivitis, the following may be used:

℞ Zinc Sulphate 0.06
Boric Acid 0.60
Distilled Water 30.00

Label: One or two drops in each eye three times daily.—From *Bulletin of the Chicago Medical Society*.

*Prepared for the Joint Committee, U. S. P., N. F. & N. N. R.

The Family in a Changing World

FATHER sits at the breakfast table distributing his attention equally between his insistent watch and his resistant son. "Your mother tells me you've been stealing my cigarettes and giving them to the boys; and smoking them, too! Fine thing for a son of mine to do! How do you expect me to trust you? How many did you smoke? Who put you up to it?" And, without waiting for the answers—if any be forthcoming—he seizes his paper and his hat and, as he dashes off to make the 7:42 for the city, he calls back over his shoulder, "I'll have something further to say to you on the subject tonight. A boy who does a thing like that deserves . . . ." and is gone, leaving his son to ponder on what it is he deserves.

Now, there is nothing new in the stealthy smoking of cigarettes by the youthful. There is nothing new in parents' outraged feelings when their offspring have failed them in some respect. Yet, in this modern

drama, with its urban and suburban setting of hurry and tension, there is something subtly new and subtly challenging in the relationships of parents and children. A generation ago the issue would have been fought out then and there—won or lost as the case might be—but finished and the slate cleaned. Father and son would have turned to other things; would, perhaps, have met again at lunch, and the feeling of the morning might have been erased by other matters of mutual concern. But today this commuting father departs in wrath, leaving behind him a state of sullen suspense and, returning late after a tiring day in the city, tries to pick up the loose threads of a broken continuity.

We have to realize that, today, parents more and more are dealing with old problems in a totally new setting. The home itself, which in the past was the economic and social center of family living, is, in many cases, coming to be an emotional center only. With the increasing complexity of our coming and going, contacts of parents with each other and parents with their children are fewer and briefer. They have no minutes to spare for blundering and antagonizing, for there are fewer minutes in which to correct these blunders and to build for character and mutual regard.

Moreover, since the world is constantly changing, we are challenged to educate the child in adaptability to new situations. There is no doubt that wise people in the past have always seen the world as a whole and have known how to discriminate. There is no doubt that there have always been competent people who have met each day as it came and have adapted themselves to the changes of time and fortune. But too often our effort to condense and pass on the wisdom of the ages has taken the form of imposing more or less arbitrary rules and formulas, useful enough in their way, but hardly flexible enough to meet so manifold and variable a thing as life, especially as it is lived today.

The growing child needs, if he is to find adjustment to the heterogenous society in which modern adults live, constant constructive aid from his parents, beginning in the earliest years. Indeed, perhaps our greatest task as parents today is to orient our children in this world as they find it—a new world in which they have few patterns to follow.

The very diffusion of the vital processes which once were entirely controlled by the home calls for greater rather than less effort on the parents' part, over a much wider range than ever before. For example: we do not have to teach our children how to read or to figure; the school is doing that, and very likely doing it much better than we might do. But, as we find our children reading more easily and more rapidly than we ourselves, we have to take increasing thought for supplying suitable reading matter. If they learn more about a larger world than we even knew, it becomes necessary to consider what interpretations they will make of what they learn.

Another example of the changes which modern ways of living have imposed upon our home practices is seen in the whole question of training our children in relation to money and its use. At school, in their after-school recreation, even through the long college years when they are actually adults, though still dependent upon their parents, they necessarily have the handling of their expenditures, with no actual control over their incomes. How, then, are they to acquire a sense of values with regard to these expenditures? It is no small part of the modern parent's task to find ways of helping young people to a balanced judgment in relation to earning and spending.

We are living in complex surroundings, our relations are intricate, more influences are operating upon our children than has ever been the case before. We need a great deal more knowledge than our grandparents had, in order to make as good a job of it as they did.

Parents have been attacked for their incompetence. They have felt helpless as one after another their ancient tasks and prerogatives have been taken from them. They have been given very little constructive guidance, during the transition period. They are coming however, to attain a new dignity. The educators and the magistrates, the clergy and the law-makers are discovering that parents do, after all, count.

Parents must realize, and more and more do, that the effectiveness of their influence upon children is dependent to a considerable degree, upon the extent to which they themselves grow in stature. There is no question of abnegating or sacrificing ourselves for our children. We have to grow through the years, along with the children, in power and in satisfaction.

If the home of our traditions has failed, in some respects, to meet these demands, this does not mean that there should be no home. If family relationships have been jeopardized by the new strains to which they have been subjected, that is no indication that these relationships are without value. On the contrary, we are challenged to reconstruct the home so that it *will* fit the needs and meet the demands of the present-day situation.

SIDONIE M. GRUENBERG,
Teachers' College,
Columbia University,
New York City.

[Many parents look to the family physician for help and guidance in meeting their domestic problems. It behooves us to give thought to such matters as those presented here ,in order that our advice, when asked, may be sane and practicable.—ED.]

Fee-Splitting

I HAVE read with much interest Dr. Tillmont's open letter, on page 209 of the March, 1931, issue of CLINICAL MEDICINE AND SURGERY, and I congratulate him upon his frankness and heartily indorse his sentiments.

I have no "fee-splitting" troubles. When a doctor refers a surgical case to me, I usually try to set a charge for the necessary operation that is just and reasonable to all concerned. Then I divide that fee exactly in half. One half goes to me and one half to the referring physician. I do not care whether the family knows about this fee division or not; there is nothing secret about it; no skullduggery; no raising of the fee 100 percent to take care of a secret "split" with the family physician. He has to live just the same as I do; and to him his time and services are just as valuable as mine are to me.

It is usually worth that 50 percent of the fee to me, to the patient and to his family, to have that family physician standing by throughout the operation. *They know him;* they have absolute confidence in him, or he wouldn't be that family's physician. Often they don't know me from Adam; and about all they do know is that their family physician tells them I am all right; or maybe the best man available for that particular piece of surgery. *That recommendation gives them confidence in me;* and that is a large part of my battle—to have the absolute confidence of the patient, especially when it comes to local-anesthesia surgery.

J. B. H. WARING, M.D.
Cincinnati, Ohio.

(Continued from page 505)

Examination revealed a "frozen pelvis." An aspiration biopsy was made through the posterior cul-de-sac. A *diagnosis* of *ovarian carcinoma* was made. A paracentesis was done eleven days ago and palpation revealed large, irregular masses protruding from the pelvis into the abdominal cavity. Short-wave x-ray therapy was started immediately. Today the abdomen is again distended.

Treatment: A McDill lymphangioplasty was performed, draining the ascitic fluid into the cellular tissue of the thighs. An intrauterine radium application was made at the same time.

Comment: The lymphangioplasty prevented a further accumulation of the ascitic fluid. Ovarian carcinomas that cannot be eradicated surgically are treated with our combined method of radium and x-ray therapy. The radiation dose is the same. The x-rays are, however, applied daily for 5 minutes only, using a 25-milliampere load, and if three fields are used, due to the increased size of such patients, the full dose is attained within about 30 to 36 days.

The further course was very satisfactory. On the day the patient was to return home she suddenly fell and became unconscious. The diagnosis was pulmonary embolism; however, an autopsy could not be obtained.

Within the year I shall follow this report with a second one stating the results of treatment obtained in these cases. No one ever improved results in the treatment of cancer without a follow-up of all the cases and, if unsatisfactory results were obtained, a search for the cause of such failures.

This clinical work could not have been done without the loyalty and diligence of my associates, Drs. Joseph E. F. Laibe, Herbert E. Schmitz, Peter A. Nelson and F Eims. Their cooperation makes possible the carrying out of the many details necessary in this work.

25 E. Washington St.

THE · LEISURE · HOUR

A Camera Bug*

A MAN is supposed to be known by the company he keeps, and this poor poor writer is no exception to the rule. The company he keeps is a camera.

My good friends who have been reading my scribblings and have seen photos I have made of places and peoples, know that I am a camera bug. If ever you recognize me, you will see an insignificant little fellow, with a big camera, looking for pointers and pictures.

I can remember away back, long, long ago when I was a little fellow, and in one of these boy's magazines I read an article telling how to make a camera with a cardboard box and a pinhole. Full of the ambition and adventure of youth, I followed the instructions and made such a camera. It was a funny little box. Not having a lens, of course, I just used a pinhole in the front of the box, and I had to give about one-half hour exposure to get a picture.

I had a little, old-fashioned glass plate, and I saved up several weeks' pocket money to buy the chemicals and the red lamp. Then, in a small cubbyhole under the stairs, I developed my first pictures. And mystery of mysteries, an image gradually appeared on the plate—marvel of science and joy of a boy's heart!

I made several of these pinhole photographs—terrible things, of course. There was an old man who ran a little photography store in the town—a genial old gentleman whose white mustache twitched as he smiled at the enthusiasms of a youngster. When I'd bring my shillings and pence in to buy plates and chemicals, first, he'd scowl at me and say, "You young scoundrel, spending your money on things like this, when you should be buying school books to improve your mind. If I were your father, I'd wallop you."

Then I'd grin and he'd grin, and he would say, "Wait a minute. I have a new camera I want to show you." And the two boys, the old boy and the young boy, would sit down and have a splendiferous time clicking the shutter and examining the internal mechanism of the new "magic box."

Soon afterward, George Eastman invented roll film, and the old gent told me that if I would give him my little pinhole box and some prints to display in the window, he'd make me a present of the first Brownie camera that came into the country. The first Brownie was a marvel of mechanical ingenuity. To you today it would be a joke.

Thereafter pocket money went to buy films and chemicals, and enthusiasm went into the making of pictures with the Brownie. Everywhere I tramped and roved, there was the little camera, as a faithful companion to record the fleeting moments, the distant view, the passing personages.

Later, when the wanderlust got the upper hand and the boy went rambling in a strange country among strange people, where jobs were scarce, the camera was a resource. The good editor of a newspaper said, "I can use a cameraman." Then I was the proud operator of an old-fashioned Graflex. There were accidents and strikes and murders and festivals and fetes to record for the news columns; trips here and there and snapshots precarious. Everywhere I roamed, slung over my shoulder was the faithful camera, recording events and earning the wherewithal.

Now, in other days when other ways prove more profitable, who am I to desert this magic genie who is better than the fellow of Aladdin's lamp? When I press the

*Reprinted from *Hospital Topics and Buyer*, May, 1931.

button, with a flash he records, ineffaceably, whatever I point him at; he gives me pictures that it would be hard to remember; he portrays faces that it would be terrible to forget; he captures beauty that it is splendid to recall.

I sit back now, grown somewhat gray, and my original camera has developed a family. There they stand on my shelf—from the little one that fits in the coat pocket, to the big one that it takes a mule to carry. But they are all worthy descendants of the little cardboard box with the pinhole, that recorded my first boyhood impressions.

HARRY PHIBBS,
Chicago, Illinois.

In the Good Old Days

Sung to tune "The Old Oaken-Bucket"

How dear to my health were the germs of my childhood,
When thoughts of infection present them to view;
The coccus, the microbe, that running so wild, would
Suggest prophylaxis, if anyone knew;
The wide-spreading pond with malaria by it,
The bridge and the stream with the typhoid as well,
The cot in the woodshed, with everything in it,
The tainted old bucket that hung by the well.

The old noxious bucket,
Septiferous bucket.
Bacteria bucket,
That hung in the well.

—*The Stethoscope*—(California).

Invidious Conclusion

She had been under a slight operation, and was telling the nurse how she felt on recovering.

"I felt so happy when I was waking," she said. "I thought at first I was in heaven. But when I saw the doctor standing over there, I knew I couldn't be."

The Doctor.

Frailties of Human Nature

The people who are responsible for the golf course at Fort Snelling, Minn., seem to have been close observers of the frailties of human nature, and have taken means to obviate, so far as possible, the deleterious effects of temperamental ebullitions upon the property of the club, as is shown by the accompanying picture of an inscription which appears upon one of the tee-boxes, following a particularly disastrous hole.

G. B. L.

A specialist is one who has his patients trained to become ill only in his office hours. A general practitioner is likely to be called off the golf course at any time.—*Kansas City Star.*

Spinal Qualities

A man's backbone should be long enough to keep him from sitting down when he ought to be on his feet "going to it," and strong enough to keep him on his feet until he *gets there.—Bul. Chicago Hosp. Assn.*

A Potent Formula

Customer: "What did you put in this prescription?"

Druggist: "That I can tell to the doctor only."

Customer: "The doctor wants to know. I gave you a Chinese laundry ticket and you filled it."

THUMBNAIL · THERAPEUTICS

Calcium Gluconate for Reduction of Edema

In the reduction of edema, associated with nephrosis and some types of nephritis following the infectious diseases of children, calcium gluconate, administered intramuscularly and subcutaneously, has been found very effective. The total amount given in one case was 155 cc. (240.55 gr.—15.6 Gm.) over a period of 21 days.—Drs. W. S. O'Donnell and S. J. Levin, of Detroit, in J.A.M.A., Mar. 14, 1931.

The Effects of Non-Living Testis Grafts

There is no known acceptable evidence that non-viable testis grafts; i e., grafts that fail to become incorporated within the body and actively secrete, exert any immediate or remote beneficial effect on the host organism.—Dr. Carl R. Moore, Chicago, in J.A.M.A., June 14, 1930.

The Ovary-Stimulating Hormone of the Placenta

Claims have been made that the hormone of the placenta has a specific effect in activating the ovary in animals.

In *Canad. M. A. J.*, Feb., 1930, Drs. A. D. Campbell and J. B. Collip, of Montreal, report five clinical cases of ovarian hypofunction in which definite results of a most encouraging character have been obtained with this therapy. Questions of standardized dosage, etc., await further investigation now being carried out.

Sal Volatile

It has been stated that sal volatile (aromatic spirit of ammonia) is an old-fashioned remedy with little scientific basis and that whatever effect it has is psychic. However, it has been prepared just for the purpose for which it is used, to be given internally as a mild and safe stimulant having a gentle and pleasing effect. It is recognized in most official pharmacopeias and by all leading writers on materia medica. There is a scientific basis for the action of its components. From the evidence in its favor, there is no doubt that sal volatile is a desirable preparation and that it still deserves a place in every pharmacopeia.—Dr. J. C. Warbrick, of Chicago, in *Am. Med.*, Feb., 1930.

Digitalis

By giving massive doses of digitalis some obtain desired ventricular slowing in 24 hours; this method is not without a certain toxic danger from over-dosage and it is not suitable for use in general practice; 30 minims (2.0 cc.) of the tincture of digitalis, three times daily; i.e., 1½ drams (6.0 cc.) in the 24 hours, given for five or six days, in most cases will slow the ventricular rate to 70 or 80; after the heart rate has reached this level, daily doses of ½ dram (2.0 cc.) should be sufficient to maintain this rate.—Dr. T. F. Cotton, in *Practitioner*, Lond., March, 1930.

The "Reinforcement by Drainage" Treatment of Tabes Dorsalis

This method is briefly as follows: An intravenous injection of 0.25 to 0.3 Gm. of silver arsphenamine is given; within 10 minutes a lumbar puncture is done and as much cerebrospinal fluid as possible is drawn off, until discomfort is felt. Fifty (50) cc. or more can usually be drawn off before any occipital headache is complained of. This operation is performed 5 times, at fortnightly intervals. In the intermediate weeks the patient has a silver arsphenamine injection without lumbar puncture. The course is repeated two or three times, with intervals during which the patient is upon bismuth or mercurial treatment.

The author has treated 164 cases of tabes, following this procedure, generally with excellent symptomatic and serologic results.—Dr. W. J. S. Reid, in *Lancet*, Lond., May 4, 1929, through *J. Chemother.*, April, 1930.

Simple Achlorhydric Anemia

Simple achlorhydric anemia is much more common than pernicious anemia. The main symptoms are pallor, undue fatigue, palpitations, edema and achlorhydria or extreme hypochlorhydria.

Iron is a specific remedy for the disease. It is prescribed, as iron and ammonium citrate, in a simple mixture with glycerin and peppermint water. The dose is increased to 30 or 40 grains (1.95 to 2.6 Gm.), thrice daily after meals. Dilute hydrochloric acid should also be given, ½ to 1½ drams (2.0 to 6.0 cc.) being diluted in a glassful of water and sipped during the meal. Treatment must be continued indefinitely.—Dr. L. J. Witts, in *Practitioner*, Lond., March, 1930.

Psoriasis

The most active way, and the method of choice today, in the treatment of psoriasis, is the intramuscular injection of sodium cacodylate in a dosage varying from 1 to 10 grains (0.065 to 0.65 Gm.). Sodium salicylate, intravenously, in the acute stages, occasionally gives good results.—Dr. P. E. Bechet, New York, in *M. J. & Record*, March 5, 1930.

Resistant Constipation

In a case of resistant constipation, where the metabolic rate is low, thyroid medication is sometimes helpful.—Dr. Chas. N Hensel, St. Paul, Minn.

Conservative Obstetrics

If the maternal mortality in this country is ever to be reduced, the prenatal care must be improved; carrying out more carefully the prevention of contact infection; improving the aseptic technic; and trying to discourage meddlesome interference. Pregnancies and deliveries should be made as normal as possible.

The most common cause of infection today is, likely, meddlesome interference; namely, unnecessary vaginal examinations, unnecessary episiotomies, forceps, versions and cesarean sections. Meddlesome interference is the antithesis of conservative obstetrics. Conservative obstetrics aims to avoid any unnecessary interference, but implies the greatest acumen in recognizing at the earliest possible moment the *symptoms* and *signs* calling for interference in the interests of mother and child.—Dr. R. T. La Vake, in *Jour. Lancet*, April 1, 1930.

Preventing Anxiety Neuroses in Surgery

People are inclined to magnify the seriousness of their condition. The comparatively small operation on some hypertrophied nasal cartilage receives the same attention as a grave mastoid or sinus operation, and the person's mind becomes overwrought to such a degree as actually to pass into a stage of true anxiety neurosis. The nose and throat expert should have an ample knowledge of personality and should restrain the nervous or even normal individual who inclines to magnify the nature of his disability.—Dr. G. H. Howland, Toronto, in *Canad. M. A. J.*, July, 1930.

Morphine in Myxedema

Experience of 3 cases shows that morphine may be dangerous in myxedema and hypothyroidism.

These cases give clinical support to experimental work in which it was shown that, in hypothyroidism, the action of morphine is intensified.—Dr. E. B. Benedict, Boston, in *J.A.M.A.*, June 14, 1930.

Flat Feet

Extreme degrees of flat feet are of two kinds, flexible and rigid, and each calls for a different treatment. Some flexible flat feet that give symptoms are best treated by strapping, padding and exercise, plus a rigid arch with heels wedged on the inner sides; others, particularly in older people, will need rigid steel plates, with massage.

The rigid flat foot cases are a more serious problem. Some, put into casts at rest for a few weeks, in supination, will soon clear up; others will require ether anesthesia and severe manipulation and stretching of the peroneal tendons before the reflex spasm

will let go. This to be followed by plaster casts for several weeks, massage, adhesive plaster strapping and an external bar caliper brace for several months.—DR. H. H. MARKEL, San Francisco, in *Am. J. Surg.*, Feb., 1930.

Collodion Treatment of Boils

The more compact the tissue about a boil, the more resistant it is to the extension of infection. Tissue can be made more compact by the use of collodion. The collodion must be contractile; namely collodion, U. S. P. After shaving and cleaning the skin, the collodion is painted in a thick circular band around and on the boil, leaving an opening where the latter is pointing. A thick layer should be built up.—DR. W. J ROBBINS, in *Am. J. Surg.*, Feb., 1930

Removing Foreign Bodies from the Eye

The essentials for the successful removal of foreign bodies from the human eye may be summed up as: (1) a comfortable position for the patient's head; (2) sufficient anesthesia to render the eye insensible to pain; (3) a good beam of light on the injured eye and good vision in the operator's eyes; (5) the proper sterilized instruments and a knowledge of what to do and how to do it.—DR. R. M. ROGERS, Brooklyn, in *Am. J. Surg.*, Feb., 1930.

Diet for the Aged

The aged require a smaller amount of nutritive material, as expressed in heat units, on account of their diminished activities. The proteins, which are the tissue builders and form the material for the rebuilding of destroyed cells, will likewise have to be reduced at this period, for there is no growth now and there is lessened destruction through lessened work.

The diet for the aged in health will have to embody two principles: give less calories and less protein.—DR. MAX EINHORN, New York, in *M. J. & Record*, May 21, 1930.

Postoperative Gastric Hemorrhage

The introduction of a stomach tube through the mouth or a Levine tube through the nose and the evacuation of all of the blood from the stomach, is one of the best means of stopping gastric hemorrhage, for it allows the stomach to contract and by contraction lessens the liability of further bleeding. No harm results from a carefully introduced stomach tube, even as recently as two hours after a gastric operation, provided the stomach contents are aspirated and not removed by lavage.—DR. C. G. HEYD, of New York, in *Am. J. Surg.*, June, 1930.

Protecting the Hands

Protection of the hands against infection can be obtained to a great extent by not removing the soap film after washing one's hands between examinations. I have followed this procedure during fifteen years of dermatologic work without incurring any infection and without ill effects to the hands. — DR. HERMAN GOODMAN, New York City, in *American Medicine.*

Pituitary Extract in Atony of the Stomach

In acute atony of the stomach, in young children, the chyme is promptly passed from the stomach after the injection of pituitary extract and the vomiting ceases rather abruptly. The dose is from 0.5 to 1 cc. of pituitary extract, combined with 0.3 mgm. (1/200 grain) of atropine. With this treatment, the "hunger cure" is superfluous.—DRS. E. KONIGSBERGER and W. MANSBACHER, in *Zeitschr. Kinderheilk.*, 44: 1929.

Sponges in Abdominal Surgery

Dry sponges and wipes readily produce injury to peritoneal surfaces and, for that reason, should never be used in the peritoneal cavity, but only warm, moist sponges. Moist sponges are also greatly superior to dry in absorbing blood, and older writers spoke of them as "greedy." This advantage has largely been lost sight of by modern operators.—DR. J. F. BALDWIN, of Columbus, O., in *Am. J. Surg.*, June, 1930.

Drainage Following Appendectomy

Drainage in an appendix operation is frequently necessary, but should almost invariably be secured through a stab wound far over to the right, and with the drainage

itself so adjusted, if possible, by *the fingers still on the inside of the abdomen*, that the omentum and cecum are utilized to prevent contact with the small intestines. The main incision can then usually be closed completely.—Dr. J. F. Baldwin, of Columbus, O., in *Am. J. Surg.*, June, 1930.

Exfoliating Dermatitis Following Sodium Sulphocyanate Therapy

A severe exfoliating dermatitis followed the administration of sodium sulphocyanate in 2½ grain doses, given twice daily. The rash disappeared after about a week. It is well to consider such a possibility when giving this drug.—Dr. J. D. Tyrrell, Fisherville, Ont., in *Canad. M. A. J.*, Jan., 1930.

Goiter and Food

The solution of the goiter problem will be accomplished through a food supply that is rich in iodine, iron, manganese and copper, and perhaps other important mineral elements upon which a sufficient study has not yet been made. Goiter does not exist in either animals or human beings where fruits, vegetables and milk are rich in these elements.—Dr. W. Weston, Columbia, S. C., in *Southern M. J.*, June, 1930.

Scarlet Fever Antitoxin in Septic Abortion

In cases of septic abortion, if the cervical smears are positive for *Streptococcus hemolyticus*, we have been using, for over 3 years, scarlet fever antitoxin as a special measure in the treatment of the infection. This may be given intramuscularly (30 to 45 cc. in each buttock) or intravenously (30 to 45 cc.), according to the severity of the infection. We have found that patients who have had scarlet fever have a very good prognosis in puerperal and postabortive sepsis due to *S. hemolyticus*.—Dr. W. A. Davis, Toronto, in *Canadian M. A. J.*, June, 1930.

Dextrose in Diabetic Coma

The cause of diabetic coma is not hyperglycemia, but the inability to burn enough dextrose to prevent ketosis.

Give 20 to 60 units of insulin and follow it *immediately* with 1,000 to 1,500 cc. of a 5- to 10-percent solution of dextrose, given intravenously. Repeat the insulin in 20-unit doses every 2 hours, balanced by 20 to 40 Gm. of dextrose. After consciousness returns, give 10 to 15 units of insulin every 4 hours, with enough dextrose (2 to 3 Gm. for each unit) to maintain a trace of sugar in the urine.—Dr. A. A. Levy, in *Am. Med.*, Oct., 1929.

Therapeutic Use of Regional Anesthesia

Injection anesthesia of peripheral and other nerves, for therapeutic purposes, lays open to the anesthetist a wide field of great usefulness. This therapy has been proved efficacious in conquering the pain in cases of carcinoma of the head and neck, in angina pectoris, in paralytic ileus, in the pains arising in diseases of the abdomen, pelvis, extremities, etc.—Dr. P. D. Woodbridge, Boston, in *Anesth. & Analg.*, May-June, 1930.

Curative Action of Digitalis in Toxemia

A series of experiments in animals showed that, if digitalis was given to the animals first, large lethal doses of toxin could be given (particularly diphtheria toxin) and the animals would survive; even if the toxin were given first and the digitalis injected not too long afterwards, animals which ordinarily would have died under the dose of toxin could almost certainly be kept alive.—Drs. W. E. Dixon and G. N. Myers in *Brit. M. J.*, May 3, 1930.

Serum Treatment of Erysipelas in Infants

Antistreptococcus erysipelas antitoxin is of definite value as a therapeutic measure in the treatment of infants. It should be given as early as possible and not later than 72 hours after the onset of illness.

In the average case, 10 cc. of the serum (concentrated form) is injected, intramuscularly, at the time of admission of the infant, and daily thereafter as long as the lesion persists. However, in the more desperate cases, as when the patient is in a moribund condition, the initial dose may be given intravenously, and the subsequent doses intramuscularly.

In 33 cases treated, no untoward reaction followed even intravenous injections.—Dr. R. C. Eley, Boston, in *Am. J. Dis. Child.*, March, 1930.

Sinusitis and Tonsillectomy

Of 108 cases in adults, diagnosed as chronic sinusitis, in which a tonsillectomy was done, 5 were cured, 51 improved and 52 were not benefited. The conclusion is that tonsillectomy does cure a few infected sinuses and improves many.—Dr. C. W. Pond, Pocatello, Idaho, in *Laryngoscope*, April, 1930.

Xylene in Pediculosis

A preparation for destroying pediculi, which is effective, cheap and non-irritating, is an ointment containing 25 percent of xylene, in a base of hydrous wool fat and petrolatum, equal parts. Patients are instructed to apply the ointment from the axillae to the ankles twice daily for at least five days. This is necessary for the destruction of nits which hatch in from four to seven days. The ointment has proved successful in the U. S. Marine Hospital, Ellis Island, N. Y.—Dr. C. Ferguson, U. S. P. H. Service, in J.A.M.A., April 12, 1930.

Extemporized Heater

If at the bedside and needing a flame for a test tube or to warm a hypodermic solution, put a methenamin tablet on an upturned teacup, light with a match, and you have smokeless flame for 5 to 10 minutes. —Dr. Frank Bates, in *Med. World*.

A Substitute for Opium

From experience in 100 clinical cases, the proprietary drug Cibalgine may be satisfactorily used as a substitute for opium. For relieving postoperative pain, one ampule every half hour, intramuscularly, for three consecutive doses suffices and, in many cases, one dose will be enough. The drug is injected intramuscularly, and no Federal narcotic blank need be filled.—Dr. G. S. Foster, in *M. J. & Rec.*, May 31, 1930.

Acute Glaucoma

A case of fulminating acute glaucoma is an emergency that may come to the general practitioner. The intense neuralgic pain, extreme prostration, nausea, vomiting, sudden loss of vision, hard eyeball and hazy cornea should suggest it.

Prompt measures are essential if relief of pain and restoration of vision are to be hoped for. If the tension does not react promptly to the use of a myotic, an emergency decompression should be attempted. It is usually best to give the patient a light general anesthetic and then insert a narrow cataract knife, subconjunctivally, into the anterior chamber between the iris and cornea, making an incision sufficiently long (2 to 3 mm.) to insure drainage into the subconjunctival space. This, of course, is an emergency operation and should only be attempted when it is not possible to refer the patient to a specially skilled practitioner.—Dr. Jas. A. Patton, of Omaha, in *Northwest Med.*, March, 1930.

Failures in Treatment of Hay Fever

Failures with the pollen-extract treatment for hay fever can be entirely eliminated if the correct pollen is chosen and the final maximum dose is sufficient.—Dr. G. L. Waldbott, Detroit, in *J. Mich. St. M. A.*, Aug., 1930.

Nutrition of Sick Children

From experimental investigations, it has been shown that the food requirements of children with chronic bone disease, especially tuberculous disease, are not high, but should exceed 50 percent above the basal requirements, calculated on the basis of the "normal" or expected average weight and the height. For patients from 2 to 6 years of age, more than 90 calories per kilogram of body weight should be given; for those from 6 to 12 years, more than 80 calories per kilogram are necessary. These requirements are approximately those for normal, well, active children, but they must be supplied to the sick children in bed.—Dr. M. G. Peterman and Irma Hug, of Milwaukee in *Am. J. Dis. Child.*, Aug., 1930.

Current · Medical · Literature

Psychiatric Aspects of Enuresis

An extensive study of the literature concerning enuresis in children, by Dr. F. N. Anderson, of Los Angeles, has led to the following conclusions, as given in *Am. J. Dis. Child.*, Oct., 1930.

1.—Emotional factors constitute by far the largest group of elements in the causation or, at least, the continuance of enuresis. Most contributory factors exert results on this basis.

2.—Physical factors, while of undoubted significance in a limited number of cases, probably exert their greatest influence indirectly, through suggestion and erroneous assumptions, by parents and others, as to being causative. To declare them of no importance in themselves is, in the majority of instances, impossible.

3.—Habit training, as reflected in attitudes and methods, is one of the most important things to be considered as responsible for persistent enuresis.

4.—Previous illnesses are factors of real importance in a large number of cases. This is mainly through relaxation of habit training, rather than as a direct result of the illness.

5.—Infantile traits appeared to be of high incidence among enuretic children. The bases of psychic infantilism are discussed. Temperamental children likewise constitute a large proportion in this group.

6.—Timidity and sensitiveness characterize an unusually large percentage.

7.—Nailbiting occurs in a high proportion of enuretic children, and appears to be an outlet for emotional energy arising from maladjustments from enuresis.

8.—Feelings of inferiority are extremely common in such children. It is not believed that they are commonly causal, but that, having developed, they lead to the continuance of enuresis.

9.—The intelligence of enuretic children is, on the whole, above the average, if one excludes a small group of intellectual defectives in which all training is difficult. More than one-fourth of all enuretic children studied had an average intelligence quotient above 110, placing them in the superior group.

10.—Parental maladjustments occur with extreme frequency as producers of emotional upsets in children, obtaining in two-thirds of all the children studied. Religious differences are one such source of trouble.

11.—Parental attitudes, particularly those of "failure" and "severity," exert deleterious effects on measures for the control of enuresis.

12.—Relationships between enuretic children and siblings are clearly etiologic, to some extent, in no small number of instances. Jealousy is perhaps the most common observation in this connection.

13.—The conditioned reflex can account for many cases otherwise inexplicable.

14.—In more than 80 percent of all cases, the onset was from infancy, representing persistence of a once "normal" habit. In almost 20 percent the onset was at some time following complete control of the bladder. It occurs as late as 12 years of age.

15.—One-fourth of all patients studied were considered cured and three-fifths as either cured or definitely improved.

Nembutal as a Hypnotic in General Anesthesia

In *Lancet*, Jan. 10, 1931, Dr. I. W. Magill, anesthetist to the Westminster Hospital, London, dealing with the use of the barbiturates in human surgery, states that the following conclusions may be drawn from the latest reports:

1.—The employment of a barbiturate as the sole anesthetic is inadvisable.

2.—As basal hypnotics, the barbiturates are among the most valuable drugs available in surgery.

3.—The suitability of a barbiturate as a basal hypnotic depends largely upon toxicity and shortness of action. The greater the toxicity the smaller is the dose required and the smaller the amount of the drug to be detoxicated or eliminated. This results in a shortened period of recovery and lessens the disadvantages associated with prolonged hypnosis. The extra nursing care of a patient unconscious for many hours is also obviated.

Dr. Magill finds from experience (262 cases) that Nembutal (sodium ethyl methyl butyl barbiturate) possesses the foregoing characteristics more clearly developed than any barbiturate so far discovered.

When given by mouth or rectum, Nembutal has a sedative effect which may amount to mild amnesia or actual sleep. For operations in which complete relaxation of the muscles is required, the addition of ether (but in reduced amount) is necessary.

When administered intravenously, the Nembutal injection need not be begun until ten minutes before the time of operation and in the patient's bed.

The postoperative effect following intravenous injection is more marked than with oral or rectal administration. Drowsiness or sleep from 1 to 5 hours after operation is the usual course.

In order to compare the results obtainable with other barbiturates, Sodium Amytal was administered intravenously in 23 cases and Pernocton in 15. Induction of preoperative sleep with the former compares favorably with Nembutal, but the recovery period is much longer.

In Dr. Magill's experience with Pernocton, induction of sleep is not so pleasant for the patient nor so uneventful as with Nembutal.

Many patients dread an anesthetic more than the operation itself. By the intravenous injection of Nembutal it is possible to mitigate these circumstances in a large majority of cases. Its use provides a pleasant method of bridging the gap between consciousness and unconsciousness before general anesthesia.

Ringworm of the Feet

A very high percentage of those using public baths, gymnasiums, showers, etc., in which the bare feet are in contact with commonly used surfaces, develop ringworm of the feet.

There is apparently no specific medicament for this condition. The remedies tried have been numerous. Among substances used have been 2-percent acetic acid, 1:2,000 potassium permanganate, iodine, mercurochrome, Whitefield's ointment, Pick's ointment, etc. Various powders, such as thymol iodide, have been placed in shoes. Floors have been rubbed with formaldehyde. The nails have been scraped. X-rays have been applied to the lesions.

A 20-percent powder of *sodium thiosulphate* in boric acid has been tried with much success, on feet, footwear and floors. A light dusting of the feet, between the toes especially, and inside socks, etc., is all that is necessary.—Dr. Wm. L. Gould, of Albany, N. Y., in J.A.M.A., April 18, 1931.

Blood Transfusion

The favorite method for whole blood transfusion, as used by Dr. H. P. Miller, of Rock Island, Ill., and described in *Illinois* M. J., Nov., 1930, is the Strauss syringe method, which he has slightly modified. Five hundred (500) cc. of blood can be transfused in five minutes and coagulation never is a difficulty.

Two special needles devised by Strauss are used. They are inserted in the veins of donor and recipient and anchored by means of a cambric needle, inserted through the skin and then through a special eye in the needle. Both needles are inserted with the point proximal on the arm, for convenience. It is not necessary to have the donor's needle pointed distally, as is so often carefully pointed out in the literature.

A blood pressure apparatus is applied above the point where the needle is to be inserted and pumped up to diastolic pressure. The patient closes the fist and if a vein is at all present it stands out. After blood flows from the needle, proving that it is in a vein, a simple one-way valve, with a small platform attached to it to make it stand upright on the arm, is attached to the needle. This is used instead of a flexible rubber connection recommended by Strauss.

Both arms being ready, a 100 cc. syringe, which has been rinsed in saline solution and then in 2-percent sodium citrate solution, is attached to the donor. The valve is opened and, if the arm band is at diastolic pressure, the syringe fills of its own accord. It is passed to the operator at the recipient's table and injected, while the same process is repeated at the donor's table. Five syringefuls are usually used. No syringe is used more than once and rarely is difficulty encountered.

As a rule, the whole transfusion is over in 5 minutes. Should delay occur on the recipient's table, the donor's syringe is reversed and blood slowly reinjected, to keep the needle open. If delay occurs at the donor's table, warm saline solution is injected slowly into the arm with a 20 cc. syringe, to keep the needle free.

If difficulty is encountered in getting into a vein, it is immediately cut down upon, under local anesthesia, and a special cannula needle, with two beads on the shaft, is tied into the vein, to prevent slipping.

Clinical Use of Certain Placental Extracts

The demonstration that alcoholic extracts of the human placenta can be separated into three definite fractions, each having distinctive physiologic properties, suggests that a clinical trial of each of these fractions should be made.

In *Canadian* M. A. J., Nov., 1930, Drs. A. D. Campbell and J. B. Collip, of Montreal, report some clinical tests of the therapeutic value of one of the fractions, the 85 percent, alcohol-soluble fraction which has been given the name emmenin. A few clinical experiments with the socalled anterior-pituitary-like fraction (85 percent alcohol precipitate) are also included. The impression received from these clinical experiments, in cases of deranged menstrual functioning, are as follows:

1.—Emmenin does not alter normal menstrual cycles.

2.—Its effect in dysmenorrhea has been particularly encouraging.

3.—It appears to correct certain types of amenorrhea of recent origin.

4.—It definitely lengthens the cycles in polymenorrhea.

5.—It relieves menopausal symptoms of recent origin, but does not relieve symptoms in castrates.

6.—An anterior-pituitary-like principle from the placenta arrests certain forms of metrorrhagia.

7.—In the treatment of altered ovarian function, the importance of a searching and accurate menstrual history, a detailed medical investigation, and in addition a scrutinizing pelvic examination, cannot be overestimated.

Ephedrine in Narcolepsy

In J.A.M.A., April 25, 1931, Drs. J. B. Doyle and L. E. Daniels, of Rochester, Minn., report that 6 patients suffering from narcolepsy were treated with ephedrine sulphate. Five (5) are completely relieved of the essential symptoms of irresistible desire to sleep without apparent cause and of cataplexy. The sixth patient was relieved of cataplexy, and hypnogogic hallucinations and somnolent tendencies were markedly improved.

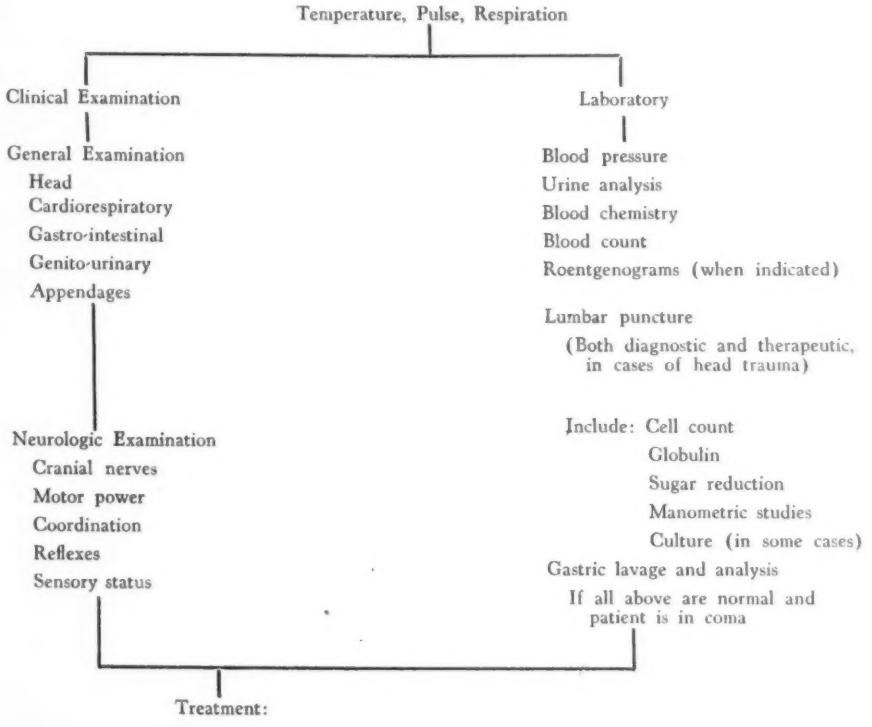
The medication was begun with small doses—3/8 grain (0.024 Gm.) thrice daily—and the dosage gradually increased to 3/4 or 1 1/8 grains (0.048 to 0.072 Gm.), thrice daily until the patient is sufficiently relieved.

Treatment of Increased Intracranial Pressure

In *J.A.M.A.*, April 18, 1931, Drs. F. Kennedy and S. B. Wortis, of New York, give the following graphic outline of treatment of increased intracranial pressure:

Outline of Procedure in Cases with Increased Intracranial Pressure

(Patient in Ward)



1.—Lumbar puncture.

2.—Hypertonic solution of dextrose by vein (100 cc. of 50-percent, three times daily).

3.—Caffeine sodiobenzoate, 7½ grains (0.5 Gm.) every four hours (hypodermically).

4.—Rectal drips of 25-percent solution of dextrose, 4 ounces (120 cc.) every four hours.

5.—Elevate head of bed from 15 to 45 degrees.

Skull trephine with ventricular puncture in posterior fossa and in third ventricle tumors, if these measures prove inadequate.

6.—Right subtemporal decompression in comatose patients with marked papilledema, who do not react to previous procedures within two or three hours.

7.—Antimeningococcus serum in suitable cases.

It has been considered good practice, heretofore, in the management of increased intracranial pressure, especially when the pressure is due to skull injury, to keep the patient horizontal, with the head at the same level as the heart. Experience has shown that this custom is not based on sound physiology. Accordingly, for many years at Bellevue Hospital, New York, patients have been placed in Goetsch beds with the head and trunk elevated at an angle of from 15 to 60 degrees from the horizontal position of the rest of the body.

Ideal General Anesthesia

The special features that should be the dominant elements in the practice of general anesthesia are given in *Anesth. & Analg.*, Nov.-Dec., 1930, by Dr. J. G. Poe, of Dallas, Tex., as follows:

1.—Use pleasant gas inductions for all patients, to banish the dread of anesthesia.

2.—Use nitrous oxide-oxygen (a non-inflammable mixture) for induction. In the absence of nitrous oxide, ethylene may be used in the same way for induction, with complete rebreathing from the beginning, and before the addition of any oxygen.

3.—Ethylene-oxygen, with nitrous oxide induction, with or without the addition of ether, is the ideal general anesthetic for abdominal and other major surgery. Ethylene should be used only in hospitals, where ventilation and other

safeguards are present. It is not an office anesthetic.

4.—Ethylene should only be used by complete rebreathing methods, to limit its inflammability with moisture, and also to limit the amount escaping into the room. It should never be used by insufflation or like methods that allow large quantities to escape in the operating room.

5.—To discard ethylene in anesthesia is like discarding the use of gasoline in transportation, because some persist in using a match to see if the tank is empty.

6.—Ether and air, after gas-oxygen inductions by intraoral insufflation methods, for tonsillectomies, and intrapharyngeal insufflations for extractions, mastoid, nasal radical, antrum and sinus operations, preferably with a throat tube that insures perfect egress of air, will give admirable service. Ether and oxygen should never be used by insufflation, because of the extreme violence of their explosion should ignition occur.

7.—Morphine premedication should be used, for adults and near-adults, unless specifically contraindicated, for synergistic action; to avoid post-operative discomfort and to prevent the inhibitory action of anesthesia (especially ether) on the kidney function.

Disproval of Objections Raised Against Contraception

The principal objections to birth control raised by physicians may be summed up as: the unreliability of methods used; the danger of possible inflammation; sterility; and that the methods are of such nature that only individuals in the middle and upper classes can use them.

In *Birth Control Rev., Dec.*, 1930, Dr. Rachelle S. Yarros states that, in the Illinois Birth Control League clinics, 1,340 cases were given contraceptive advice and more than 96 percent of the traced cases reported successful use for from 1 to 14 months. There has not been the slightest evidence that the methods advised cause inflammation or sterility. The methods advised are used equally well by all classes of society; they are well within the reach of the lowest classes, from the cost standpoint.

The Anesthetic Problem in Otolaryngology

In *Laryngoscope*, Dec., 1930, Dr. R. Levy, of Denver, states that it is routine with him, in all tonsil operations under anesthesia and almost routine in all others, to administer one or two doses of hyoscine, morphine and cactoid, the socalled H.M.C.

Generally speaking, H.M.C. may be given in two doses, the first, consisting of morphine 1/4 gr. (0.016 Gm.) and hyoscine 1/100 grain (0.65 mgm.), 45 minutes before the operation, and the second dose, 20 minutes later, consisting of 1/8 grain (0.008 Gm.) of morphine and 1/200 grain (0.32 mgm.) of hyoscine. It is always wise to have the patient carefully watched following the first dose and to omit the second if he is profoundly affected by the first.

The question of bleeding is an important one in deciding between local and general anesthesia in tonsil operations. Delayed primary bleeding (that which occurs anywhere from 3 to 12 hours after the operation) is much more frequent following local than following general anesthesia.

The recent use of barbituric products prior to local or general anesthesia is attracting considerable attention; it is believed that they neutralize the toxic effects of cocaine and procaine; their ill effects seem negligible.

Auricular Paroxysmal Tachycardia Treated by Calcium

No method of treatment so far known is always uniformly successful in stopping paroxysms of auricular tachycardia.

In *Ann. Intern. Med.*, Jan., 1931, Drs. Jos. B. Wolffe and S. Bellet, of Philadelphia, report that, of 5 personal cases, in 3 the paroxysms ended suddenly, almost dramatically, following the intravenous injection of calcium.

The calcium was administered in the form of afenil or calcium gluconate. The remedy must be injected slowly, about 5 minutes being required to inject 20 cc. The reaction symptoms —a sense of intense heat, constriction in the throat, nausea or burning in the rectum—are evanescent. In 2 cases, follow-up treatment in the form of calcium lactate, 20 gr. (1.30 Gm.) t.i.d., was given orally.

The authors believe that this is a therapeutic measure which, while not successful in every instance, is well worth trying when other methods have failed or where the attack is dangerously prolonged.

Diet After Operations on the Stomach

In *Am. J. Surg.*, Dec., 1930, Dr. A. F. R. Andresen, of Brooklyn, remarks that most existent postoperative diets are irrational and add to the danger of operation, to the discomfort of the patient and to the length of the period of convalescence.

For many years the following routine method has been followed (with occasional slight modifications) in the Long Island College Hospital and has given very satisfactory results:

First Day

Feedings every two hours, as follows:

Beginning on recovery from anesthetic or three hours after return to ward.

Gelatin solution, 4 oz.

Second Day:

Feedings every one and one-half hours, as follows:

Gelatin solution, 4 oz. and gruel mixture No. 1, 4 oz., alternating.

Third Day:

Feedings every one and one-half hours, as follows: Gelatin solution, 5 oz. and gruel mixture No. 1, 5 oz., alternating.

Fourth and Fifth Days:

Feedings, every two hours, as follows: Gelatin solution, 6 oz. and gruel mixture No. 2, 6 oz., alternating.

Sixth and Seventh Days:

Gelatin and gruel, alternating, as on previous days, but add to the 3 gruel feedings in a day any one of following: 1 soft-poached egg; 3 oz. cereal; custard.

Eighth, Ninth and Tenth Days:

Gruel mixture No. 2, 6 oz. every three hours, adding to each feeding any *two* of the following: 3 oz. cereal and cream; 1 soft egg; custard; or jello, 2 oz.

Eleventh Day and thereafter:

Long Island College Hospital ulcer diet, which includes milk, eggs, cereals, vegetables and fruit juices, but does not include any kind of meat. Meat is not usually allowed in the diet for 3 to 4 months following operation.

The formulas mentioned in the diet are as follows:

Gelatin solution:	Ounces	Grams	Calories
Gelatin	1	30	110
Lactose	3	90	360
Juice of 1 orange	....	.....	40
Water	32	1000	.....
Gruel mixture No. 1:			
Cereal gruel (oatmeal, barley or cornmeal)	16	500	125
Milk	14	420	280
Cream	4	120	480
Lactose	3	90	360
Gruel mixture No. 2:			
Cereal grue (oatmeal, barley or cornmeal)	12	350	100
Milk	32	1000	640
Cream	4	120	480
Lactose	4	120	480

Nitrous Oxide in Oral Surgery

In *Anest. & Analg.*, Nov.-Dec., 1930, Dr. E. P. de Caux, of London, Eng., states that there is overwhelming evidence to show that nitrous oxide is by far the most convenient and safest anesthetic for all dental operations.

The problem of how to prolong anesthesia, and yet leave the patient's mouth free for the surgeon, is solved by the nasal and the endotracheal methods of administration.

The endotracheal method of administration consists of admitting the anesthetic vapors into the lungs by means of a tube passed through the mouth or a nostril into the trachea. This secures a definite air-way, and leaves the field of operation clear for the surgeon.

With the nasal-endotracheal method, gauze packing of the pharynx is used to prevent the inhalation of air round the tube, and to catch, and facilitate the removal of, all extraneous matter that may fall towards the trachea.

In the nasal-endotracheal method, the patient is first anesthetized, and the tube is then passed through one nostril between the cords into the trachea. The tube should not be allowed to touch the glottis, and may be passed between the cords without touching when they open for inspiration.

The oral-endotracheal method is on the same principle, but the tube is passed into the trachea via the mouth.

Central and Peripheric Nystagmus

The differential diagnostic points between nystagmus of peripheric and of central origin are given by Dr. G. W. Mackenzie, of Philadelphia, in *Eye, Ear, Nose and Throat Monthly*, Dec., 1930, as follow:

Nystagmus of Periperal Origin	Nystagmus of Central Origin
1.—More frequently of the mixed rotary horizontal form.	1.—More often occurring in a single plane—vertical, horizontal, rotary or oblique.
2.—The direction of the nystagmus in a destructive lesion is away from the affected side, and its direction in irritative lesions is toward the side of the irritation.	2.—The direction of the nystagmus may be to either side.
3.—Vertigo is an outstanding accompanying symptom.	3.—Vertigo is practically absent, or very slight at most.
4.—The nystagmus is of comparatively short duration, due to compensation which follows.	4.—The nystagmus as a rule shows no signs of improvement.
5.—Symptoms referable to the vegetative system are marked.	5.—Symptoms referable to the vegetative system are practically nil.
6.—Along with the nystagmus, there are frequently associated symptoms referable to the hearing apparatus on the side of the iesion.	6.—Deafness can be present, but not as an associated symptom, as in the case of a peripheral lesion.

Reduction of Arm Fractures

In the opinion of Dr. P. B. Magnuson, of Chicago, as given in *Internat. J. Surg.*, Dec., 1930, it is impossible to reduce satisfactorily a fracture of a long bone by manual traction.

A very simple and effective method of obtaining traction on fractures of the humerus and forearm is as follows: A heavy muslin bandage is passed under the patient's back, through the axilla and over his chest. The ends are tied to the side of the table opposite the injured member, thus establishing countertraction. A muslin bandage is then made into a loop which is approximately as long as the operator's arm. This loop is fastened around the patient's wrist and placed under the operator's shoulder. The operator can press his foot or knee against the side of the table and lean against this loop without any muscular effort exerted on the arms. This

allows slow, gradual, steady traction under perfect control, without any effort, and leaves both the operator's hands free to manipulate. A force of one hundred pounds if necessary can be put on the loop without tiring the operator and without moving the ends of the fractured bones on each other and thereby causing reflex action in the muscles.

By this method a fracture at any place from the shoulder to the hand can be manipulated into place.

With fracture of the leg, strong traction for reduction of a fracture of the bones to which the heavy muscles of the leg are attached can be made by passing a bed sheet between the patient's thighs and tying the ends of this to the leg of the table toward the patient's head, nearest the side of the injured member. With the muslin bandage passed around the ankle in the form of a Collins' hitch, or what the sailors used to call a clove hitch, this in turn being attached to a block and tackle, a tremendous stretching force may be exerted without any effort on the part of the surgeon.

Treatment of Syphilis

In early syphilis, should bismuth or mercury be given concurrently with arsenobenzenes? This question is answered in the affirmative by Dr. L. W. Harrison, in *Practitioner*, Feb., 1931, who thinks that one or other of these metals should be given in at least the first course, giving a number of reasons in support of his view; the most important of these is the frequent occurrence of later neuro-syphilis where the arsenobenzenes alone are given.

The author suggests that those who are now treating their early syphilis cases on the plan of alternating courses of arsenobenzene with courses of mercury or bismuth are laying up for their patients a heritage of neuro-syphilis. The value of **Bismarsen** (bismuth arsphenamine sulphonate) in this regard is pointed out.

Compensable Hernia

Summing up the medical opinions of recent years regarding socalled "traumatic" hernia, Dr. H. W. Garton, of Fort Wayne, Ind., in *J. Indiana S. M. A.*, Nov. 15, 1930, believes that the following conclusions may be drawn:

1.—Excluding the true traumatic type, hernial development is dependent, primarily, upon predisposing anatomic conditions of the abdominal wall.

2.—A simple act of lifting, straining, slipping, falling, etc., is very rarely, if ever, of sufficient violence to produce a hernia *de novo*.

3.—Such acts are *frequently* the occasion by which the hernia is advanced to the point where it is brought to the attention of the owner.

4.—Members of compensation boards who hear the evidence (in contested cases) should possess a knowledge of the fundamental nature of hernia, and such knowledge should conform to accepted medical opinion on the subject.

5.—It is the consensus of opinion that there are fairly definite criteria for establishing a causal relationship of alleged accident to hernia; these include an analysis of the history of the accident, reporting of the accident within a reasonable period, and the stage of hernial development as shown by physical examination. Equitable deductions can be made only when all of these factors have been correlated properly.

Mental Hygiene

Environment, according to Dr. Geo. B. Lake, of Chicago, in *M. J. & Record*, Jan. 21, 1931, is a far greater factor than heredity in shaping our psychic destinies.

It has remained for this generation to discover that there are laws governing mental health, just as there are in the fields of hygiene which are now familiar to us.

Self discipline and temperance in all things, a sense of proportion and of responsibility, respect for the rights and feelings of others, and all those matters which we think of as characterizing adults, as distinguished from children, are psychic connotations.

The idea that mental traits and intellectual power are transmitted by heredity is now in process of going the way of other long-held superstitions. We can confer mental health upon our children only by directing their activities with intelligence and teaching them to govern themselves, and such teaching can be given adequately only by those who have learned the lessons in their own lives. The surroundings of a child, from the time of its conception onward, are of vital importance and no one can adjust these in the most effective manner by the light of a heaven-sent inspiration. The details of these adjustments must be learned by hard and extensive study.

The only worthwhile thing that parents can give to their children is the ability to stand alone and to walk a clearly seen path with heads erect and a smile, interfering with no one, permitting no one to interfere with them unwarrantably and undaunted by the vicissitudes of life.

The foundations of mental health must be laid in childhood.

The prime essentials for the attainment of a sound and robust psychic equipment are: A set of understanding and sympathetic parents; the banishment of ignorance, fear and superstition; the elimination of selfishness; the acquirement of a philosophy of life, a sense of humor and a set of creative activities which can be pursued with enthusiasm; and, finally, the regular daily exercise of the physical, emotional and mental vehicles of consciousness.

Acute Abdominal Disease

Discussing abdominal disease emergencies, in *Practitioner*, Lond., Jan., 1931, Lord Moynihan remarks that the acute catastrophes which occur in connection with abdominal diseases are only the acute terminations of chronic diseases, and are rarely acute new diseases.

Regarding perforation of gastric or duodenal ulcer, shock is never a symptom. It is a symptom of peritonitis, which occurs later. Perforation of these ulcers is almost invariably preceded by the history of a chronic ulcer; when perforation occurs, the patient is struck motion-

less; he endures a degree of agony that reaches the very limit of human power to withstand; his abdomen is inflexibly and unalterably rigid, but the pulse is normal.

In acute thoracic disease, an important sign of differentiation is the rate of respiration. The normal ratio of pulse to respiration is approximately four to one. If this ratio is reduced to three to one or two to one, then with increasing probability the lesion is above the diaphragm. In thoracic conditions the temperature is almost always raised and may be high—102°F. or over.

In acute inflammation of the pancreas there is always shock.

Acute hepatic colic may be distinguished from perforation: in perforation there is immobility; in colic there is restlessness.

Treatment of Pneumococcus Type I Pneumonia

In *J.A.M.A.*, Nov. 22, 1930, Drs. R. L. Cecil and N. Plummer, of New York, report an intensive study, especially of the specific therapy of pneumococcus Type I pneumonia.

1.—A series of 3,662 cases of pneumococcus pneumonia in adults and 271 cases in children was studied, clinically and bacteriologically. Of this series 1,161 cases were Type I infections and form the basis of this study.

2.—Type I pneumonia is considered as a definite clinical entity; it usually runs a typical course, terminates by crisis, and has a high incidence of complications.

3.—Type I pneumonia is the most prevalent of all the types, constituting approximately one-third of all adult lobar pneumonias treated in Bellevue Hospital. It is quite rare in infants under 3 years of age, but is particularly prevalent in young adults.

4.—The mortality rate in 412 patients receiving no serum was 28.2 percent. For reasons not entirely evident, the death rate for Type I pneumonia in Bellevue Hospital has shown a steady increase since 1921-1922, when it was 20.0 percent, to 1928-1929, when it was 42.8 percent. The death rate for septic Type I cases, without serum, was 66.7 percent.

5.—The evidence in support of the therapeutic value of Type I serum is presented, from an experimental and clinical standpoint.

6.—In a series of 171 cases treated with Huntoon's antibody solution,* as compared with an equal number of control cases, the efficacy of the solution is shown by a marked reduction in mortality rate. The disadvantages of this preparation are indicated.

7.—Felton's concentrated antipneumococcus serum was used from 1924 to 1929, and evidence is presented to show that it is often more than ten times as potent as unconcentrated preparations. Felton's antipneumococcus serum is prepared as follows:

Twenty percent anhydrous sodium sulphate is added to standard antipneumococcus serum and allowed to stand in an incubator at 37°C. from one to two hours, until a precipitate forms. After filtration, the precipitate is dialized in running water from five to seven days, viscous membranes being used for the dialysis. The content of the sac is then adjusted to pH of from 4.6 to 4.8, at which point a second precipitate forms. This precipitate is removed and the clear supernatant fluid, containing immune bodies and some globulin and albumin, is adjusted to a pH of 6.8 and diluted four or five times with cold distilled water. A white precipitate is thrown down containing practically all the protective substance in the original serum. This precipitin dissolves readily in sodium chloride, is high in protective power, and is practically free from chill-producing substances.

A series of 239 cases of Type I pneumonia treated with Felton's serum shows a death rate of 20 percent, as compared with a mortality rate of 31 percent in a control series of 234 untreated cases. There is a further reduction in death rate to 11.7 percent in cases treated within seventy-two hours after onset.

8.—Type I serum is no longer in the experimental stage. When administered early and in adequate dosage, the clinical results are striking. The present study demonstrates that concentrated serum possesses all the therapeutic value of the unconcentrated preparation. Furthermore, concentrated serum has a much higher potency and a lower content of chill-producing substances and horse serum proteins, which make it more easily administered and less frequently followed by chills, serum reactions and serum sickness.

*(A water-clear solution of antipneumococcal immune bodies, polyvalent for types I, II and III.)

Biologic Contraception

Further studies in the possibilities of controling conception by biologic methods have been carried out by a number of investigators and are summarized, with a bibliography, in an editorial comment in *J.A.M.A.*, for May 16, 1931.

Experiments have shown that the injection of female sex hormone into white mice and rats and into guinea-pigs will prevent conception and interrupt pregnancy, at least in its earlier stages The longer the pregnancy has progressed, the larger the doses of the hormone required to terminate it.

While these findings are by no means yet ready for application to problems of human contraception, (though experiments of this sort are being carried out in Russia), they show that the interest along these lines is keen and suggest that something of this kind may be forthcoming in the not-distant future.

The Bacteriophage in Therapeutics

In *Presse méd.*, Paris, Feb. 4, 1931, Dr. P. Hauduroy points out that some danger in regard to the use of the bacteriophage lies in the existence of *secondary cultures* following filtration, due to filterable forms of visible microbes. It is extremely difficult to foresee the appearance of these forms and it is still more difficult to prevent their appearance. The controls to which the bacteriophage should be subjected ought to be numerous, prolonged and very severe.

The bacteriophage used should be specific and destructive of the microbe causing the infection.

Of 10 colon bacilli isolated from the urine, for example, 5 or 6 are lysable, the others are not. The best way of determining the actual specificity is to test for lysis *in vitro*, not *in vivo*, isolating, if possible, the causative germ first. The bacteriophage should be prepared from the actual causative microbe if it is possible to do so. This determination of specific strains of germs is not so necessary in the case of staphylococcic infections; only from 15 to 20 percent of the known strains of this type are not lysable. But an *auto*-bacteriophage should always be used if possible.

The general rules for the application of the bacteriophage, as used by the author are:

1.—Make 2 or 3 subcutaneous injections of from 2 to 3 cc. each, at 24-hour intervals, keeping the site of the injection at some distance from the site of the lesion to be treated.

2.—Apply the bacteriophage in local dressings (this includes oral administration when the infection is localized in the digestive tract).

3.—Never make intravenous injections.

As regards indications, all staphylococcal infectious processes, superficial or profound, may be treated.

In staphylococcal infection of the most diverse types, the author has obtained about 76 percent of absolute recoveries and 24 percent failures with the bacteriophage treatment.

In colon bacillus infections, more care must be observed and great attention must be given to the preparation of a strictly specific bacteriophage for the exact strain of bacillus.

Excretion Pyelography with Abrodil

In *Surg. Gynec. & Obstet.*, Feb., 1931, Drs. H. Brouner and J. Schueller, of Cologne, Germany, describe a new salt named Abrodil for intravenous pyelography. Abrodil is the sodium salt of iodo-methane-sulphonic acid. It is soluble to the amount of 70 percent in water and has a neutral reaction, is isotonic with the blood and there is no hemolysis of the erythrocytes suspended in it. Its use enables excellent pyelograms to be made.

In animal experiments and clinical investigations it was found that the excretion of Abrodil was extremely high. Its use not alone secures good pyelograms, to be obtained by a safe method of intravenous injection, but the rate and amount of elimination may be used as a means of testing kidney functional capacity.

Diphtheria Immunization with Loewenstein's Ointment

As reported in *Am. J. Dis. Child.*, Jan., 1931, Drs. A. F. Abt and B. F. Feingold, state that since 1929, they have used the percutaneous method of Loewenstein for producing an active immunity against diphtheria in 62 children of various ages. The material used was Loewenstein's ointment, which contains, not only diphtheria toxoid, but also the unfiltered full culture of dead diphtheria bacteria, incorporated into an ointment.

The chest, back, abdomen or arms may be used as the site of the rub. The skin is prepared with ether and alcohol and the contents of a single tube of Lowenstein's preparation are rubbed in for a few minutes and allowed to dry; the surface is not washed for 24 hours.

Of the 62 children treated, 44 or 70.9 percent, showed negative Schick tests after variable periods, which compares very favorably with the toxin-antitoxin method of immunity. But the percutaneous method has the advantages that it avoids the dangers which may follow the introduction of a foreign protein directly into the lymphatic circulation and of the liberation of a free toxin in the system, as well as the occurrence of constitutional reactions and sensitizing the child to other serums.

Domestic Refrigeration and Public Health

Domestic food refrigeration cannot attain its full possibilities unless it can guarantee a safe as well as efficient installation.

In *Illinois M. J.*, Dec., 1930, Dr. A. H. Kegel, Commissioner of Health, Chicago, states that the refrigerating system should be constructed in such a manner that the necessary pressure tests to detect leaks can be readily applied and with the least inconvenience to the occupants.

Tests have shown that leaks were all found (in multiple refrigerating systems) in and around the evaporator, including the pipes leading to and from the evaporator as far as the wall connections. It was also found that failure to anchor the refrigerator was often a factor in producing leaks.

All poisonous or toxic refrigerant gases used in any "direct-indirect" system of refrigeration should have a distinct and easily recognizable odor or characteristic irritating properties in the minimum concentration in air at which they are poisonous to experimental animals after at least 12 hours exposure.

The evaporator should be of heavy metal with welded joints, to prevent damage by the use of ice picks. The compressor should be placed in an uninhabited part of the building and the room containing the compressor should have tight walls with no communication to other parts of the building, and ventilated to the outside.

All refrigerating plants circulating substances of a poisonous nature should be inspected regularly.

Epithelioma of the Lip

In *Am. J. Cancer*, Jan., 1931, Dr. D. Quick, summarizing a special clinic on epithelioma of the lip, in the Memorial Hospital, New York, states that histology does not aid in the selection of the treatment method for lip cancer to the same extent that it does at any other point in the upper mucous membrane tract. Recognition of the clinical type of disease is of relatively greater importance. The extensive, bulky, papillary growth, which may involve the entire surface of the lower lip, yet which infiltrates but slightly, is a much less serious condition than the small, deeply-infiltrating, insignificant-looking growth.

The average lip epithelioma is handled most satisfactorily by surface application of heavily-filtered radium on three sides of the growth, held

in place with a dental modelling compound applicator. It is the exception rather than the rule to find palpable metastatic involvement of neck nodes in these cases. X-radiation through both sides of the neck is employed as a precautionary measure.

The chief point to be stressed is the careful, regular, routine follow-up of this group.

Where metastatic involvement of the cervical nodes is manifest, the palpably uninvolved neck is irradiated heavily, externally. Palpable nodes with intact capsule are dissected out. A metastatic node with capsule invaded by tumor tissue is regarded as inoperable and treated by implanted radium.

A check-up of all the cases treated seems to indicate that the dissection of the submental and submaxillary group, plus the upper deep cervical group—in other words, that area which may be reached satisfactorily through a full submaxillary incision—gives quite as good results as the complete operation.

Gold-Sodium Thiosulphate in Pulmonary Tuberculosis

An experience of four years of the action of thiosulphate of gold and sodium in the treatment of pulmonary tuberculosis, by Dr. Leon Bernard, of Paris, France, as reported in *Illinois M. J.*, Feb., 1931, leads him to these conclusions:

Thiosulphate of gold and sodium is not a specific remedy for tuberculosis. However, its therapeutic action, though inconstant, seems to us certain. From our experience, it particularly shows and asserts itself in the course of acute forms, and especially in the acute evolutionary stages of pulmonary tuberculosis,

In this respect no other chemical drug can actually be compared to it.

If we could summarize our thoughts in a short formula, we would say that this drug represents a typical remedy—often efficacious for the evolutionary stages of pulmonary tuberculosis, arresting it and thus favoring the ultimate and partial retrocession of the lesions.

We do not believe that the drug possesses an antibacillary action; we rather have the impressions that it exerts its action on the tuberculous lesions, at least in the lungs. Nevertheless, there are enough facts actually published for us not to deny the therapeutic virtue of this agent. Our own personal experience has firmly convinced us of this.

Etiology of Goiter

In *Ann. Intern. Med.*, Nov., 1930, Dr. D. Marine, of New York, stresses his conviction that iodine is a direct antigoitrogenic substance, in that it is the essential constituent of the thyroid hormone and therefore prevents goiter by making it easier for the thyroid to produce an abundance of thyroxin.

A relative iodine deficiency may be brought about by a deficiency of certain antigoitrogenic substances, such as glutathione and hexuronic acid, both of which substances are normally present in great concentration, if not actually produced, in the suprarenal cortex and sex glands, and are powerful inhibitors of tissue oxidation.

Experimentally, the author has found that winter cabbage contains a powerfully goitrogenic substance, whereas summer cabbage contains a powerful antigoitrogenic substance. Relative-iodine-deficiency goiter may be produced in rabbits by feeding them cabbage with a high goitrogenic or a low antigoitrogenic factor. The goitrogenic substance has not been isolated.

The fact that goiter may be due to a secondary, indirect deficiency of iodine should not be overlooked.

Puerperal Infections

Puerperal infection is still responsible for from 30 to 45 percent of all deaths among parturient women. It is not an autogenous infection and epidemics still occur in institutions equipped with all the resources of modern science.

The opinion of Dr. C. Jeff Miller, of New Orleans, as given in *Surg. Gynec. & Obstet.*, Oct., 1930, is that the best treatment of puerperal infection is prophylactic treatment. It implies the full regimen of prenatal care. It implies the preservation of a most rigid aseptic technic throughout the delivery, with the proper preparation of the vulva, vagina and rectum, the wearing of rubber gloves and of masks, the elimination or the reduction to a minimum of internal examinations and the conduct of labor with aseptic expectancy, with interference based on the indications rather than on the patient's demands or the accoucheur's convenience. It implies a puerperium conducted with regard to the laws of hygiene and cleanliness, and with very little interference beyond that. Finally, it implies the masking of the mouth and nose of all persons associated in any capacity with the patient during her labor and in the first days of her puerperium.

In established puerperal infection, blood transfusion is the main reliance. The preferred method is the giving of from 250 to 300 cc. of whole blood, with an equal amount of Ringer's solution, at three-day intervals, from different donors.

Aside from transfusion, aside from occasional surgery, aside from the purely local treatment of purely local lesions, aside from the occasional removal of debris from a patulous cervix and bleeding uterus, the treatment of puerperal and post-abortal infection is limited to symptomatic measures: Rest, avoidance of nursing, generous diet, proctoclysis, hypodermoclysis and infusions, control of pyrexia, securing sleep by narcotics, keeping the bowels free, control of vomiting and diarrhea, if present, with the use of the Levin or Rehfus tube. Drugs are given only on definite indications. These measures are those that help the woman to fight her own battle and they give better results than surgery, manipulations or specific treatment.

NEW · BOOKS

I have ever gained the most profit, and the most pleasure also, from the books which have made me think the most.—J. C. HARE.

Addis and Oliver: Renal Lesion in Bright's Disease

THE RENAL LESION IN BRIGHT'S DISEASE. *By Thomas Addis, Professor of Medicine, Stanford University, and Jean Oliver, Professor of Pathology, Long Island College of Medicine; Formerly Professor of Pathology, Stanford University. With 170 Full-Page Plates, 2 in Color. 21 Text Illustrations and 1 Folding Table. New York: Paul B. Hoeber, Inc. 1931. Price $16.00.*

The authors of this very fine piece of work are to be congratulated on the production of what is rather rare in these days—original research in a field of medicine which is already well worked over. Their study of the renal lesion in Bright's disease extends over 10 years and is based on the close clinical observation of the patients, supplemented, when possible, by the autopsical investigation of the kidneys in a large series (72 cases) of different types of undoubted Bright's disease. The monograph is, therefore, an authentic correlation of the clinical and pathologic findings, with suggestions for classification and a theory of pathogenesis, based on the morphologic and pathologic observations. From the mode of presentation of the data, the reader can use his own independent judgment as to the correctness of the correlations.

The histologic plates accompanying the case histories are uniform in magnification, thus affording a common basis for comparison by the reader. These plates are not merely illustrations of the textual matter; rather they form the real facts for study, and the text, to a great extent, illustrates and explains them.

The authors here return to the older method of studying kidney disease on the basis of the morbid anatomy, rather than upon the basis of alteration of functional ability, which is the present-day generally accepted method. Naturally the authors are convinced of the superiority of the morphologic method in arriving at a pathologic classification of the nephritides, which can be applied easily and accurately in the clinic. It should be understood that the work is confined to a study of the renal lesion in Bright's disease and is not a study of Bright's disease itself, including extrarenal factors.

The first six of the eleven chapters which comprise the book deal with the present clinical conceptions of Bright's disease, and especially of the renal lesion. These make up 170 of the total 628 pages. The last five chapters cover the detailed case histories and deductions from them.

Pathologists and clinicians should find this a manual of absorbing interest and it adds a new chapter to the study of the kidney.

The bookwork deserves special mention. The printing is on thick, opaque paper and the typography and general representation leave nothing to be desired.

Rockwell: Streptococcic Infections

STREPTOCOCCIC BLOOD STREAM INFECTIONS. *By George E. Rockwell, M.A., M.D., Associate Professor of Bacteriology, College of Medicine, University of Cincinnati; Member of Senior Medical Staff, Bethesda Hospital; Assistant Director of Bacteriological Service, General Hospital of Cincinnati. New York: The Macmillan Company. 1931. Price $1.75.*

In this monograph the author attempts to give the more salient points which will prove to be of practical use to the practitioner in his work with patients suffering from streptococcic infections, especially blood stream infections. It not only covers the clinical phases, but also applies the known physiologic, pathologic, bacteriologic and biochemical knowledge regarding these microbes, as well as the complicated reactions which take place between the host's body and the streptococci.

Practitioners will find here all the outstanding features of these common infections and their management.

McLester: Nutrition and Diet

NUTRITION AND DIET IN HEALTH AND DISEASE. *By James S. McLester, M.D., Professor of Medicine at the University of Alabama, Birmingham, Alabama. Second Edition, Revised and Reset. Philadelphia and London: W. B. Saunders Company. 1930. Price $8.50.*

The first edition of Dr. McLester's excellent treatise was reviewed in CLINICAL MEDICINE AND SURGERY, March, 1928. Since that time much progress has been made in our knowledge of the mechanism of nutrition, especially as regards the importance of vitamins.

The second edition has been fully revised so as to include new facts revealed by experimental and clinical observation and their application to deficiency diseases, diabetes, obesity and other syndromes directly or indirectly traceable to disturbances of metabolism and digestion.

The book has been written to meet the point of view of the general practitioner, rather than to that of the dietitian.

Part I deals with nutrition in health and has

three sections: The Need for Food and Its Utilization: Food Products: and Diet in Health. Part II covers nutrition in disease and is arranged in the order of organs and systems of the body. Part III gives tables and charts of a general nature.

We have no hesitation in saying that this volume is one of the best we have seen on the subject of nutrition, very complete in dealing with the various factors connected with it, well written and that everything that the general physician needs to know on this broad subject will be found in it.

Faegre & Anderson: Child Training

CHILD CARE AND TRAINING. By *Marion L. Faegre, Assistant Professor of Parental Education, and John E. Anderson, Director, Institute of Child Welfare, University of Minnesota. Third Edition Revised.* Minneapolis: *The University of Minnesota Press.* 1930. *Price* $2.00.

"Train a child in the way that he should go and when he grows up he will not depart from it." This aphorism may not be absolutely true, but experience has proved that our characters and dispositions are, to a very great extent, formed by our early habits and viewpoints.

The importance of correctly directing both physical and psychic habits from earliest infancy cannot be over-estimated and it is the object of this book to help parents to accomplish this. The authors' advice is based on scientific study of child training; it is sane, trustworthy and practical; and both authors' views have, not only the support of the observation and results of others, but of their own, in the care and raising of children.

The family physician has many functions besides the prescribing of medicine. He is a family friend and guide and should be this especially to young parents. This is a book which he may very heartily and strongly recommend to fathers and mothers, as well as to others concerned in the training and care of children.

Howard: Pneumonia

OXFORD MONOGRAPHS ON DIAGNOSIS AND TREATMENT. *Edited by Henry A. Christian, M.D., Sc.D., LL.D., Hersey Professor of the Theory and Practice of Physic, Harvard University, and Physician-in-Chief, Peter Bent Brigham Hospital, Boston, Mass.* Volume X, the Diagnosis and Treatment of Pneumonia. By *Campbell P. Howard, B.A., M.D., C.M., F.R.C.P. & S. (Can.), Professor of Medicine, McGill University, and Physician to the Montreal General Hospital, Montreal, Canada.* New York: *Oxford University Press.* 1931. *Price, complete set of ten volumes,* $100.00.

This is volume 10 of the *Oxford Monographs on Diagnosis and Treatment,* a series designed for comprehensive discussion of the diagnosis and treatment of the commoner disease entities, by men competent to select what is best, according to present-day conceptions, and to present it with sufficient detail and clarity so as to be of practical help in the problems of practice.

In the nine chapters which make up this volume, Dr. Howard gives all the known pertinent information regarding the pneumonias, especially lobar pneumonia. These include the etiologic factors, anatomy, symptomatology, diagnosis, complications, the clinical types and prognosis. The treatment includes the hygienic measures, specific vaccine and serum therapy, especially Huntoon's antibody solution and Felton's concentrated serum. The treatment of complications is also discussed.

All the facts are given in a concise, clear and nondogmatic manner, which leaves room for the practitioner to use his own judgment while evaluating the opinions and experience of others.

These monographs are excellently printed. The books are made up in the loose-leaf style so that the addition of new matter, as more knowledge becomes available, is easily provided for.

The book gives a comprehensive view of the present aspects of the pneumonia question.

U. S. Dept. of Labor: Prenatal Care

PRENATAL CARE. *By the United States Department of Labor, Children's Bureau. Bureau Publication No. 4, Revised July,* 1930. *Washington: Government Printing Office.* 1930. *Price* $0.10.

This little monograph is issued by the Children's Bureau of the Department of Labor, as a guide for the prenatal care of the mother and expected child. It has been prepared with the cooperation of a number of leading obstetricians and gynecologists.

The price is only 10 cents and family doctors may recommend it to prospective mothers as a guide that may be followed with confidence; moreover they will find many hints in it which they themselves can utilize.

Shaw: Culture

THE ROAD TO CULTURE. By *Charles Gray Shaw, Ph.D., Professor of Philosophy, New York University; Author of "Christianity and Modern Culture," "The Value and Dignity of Human Life," "Outline of Philosophy," etc. Decorations by Irving Politzer.* New York *and London: Funk & Wagnalls Company.* 1931. $2.00.

The *mores* change with environment and circumstances. In the seventeenth and eighteenth centuries all gentlemen were cultured as a matter of course. To be a boor was "immoral." Life was leisurely, then, and living (for the elect) easy.

Then came the pioneer days in this country. Men wrung a meager living, hardly, from a hostile land, in fear of wild beasts and wilder men. No time nor strength, then, for poetry, pictures or *bon mots!* The shadows of those rigorous years fell across our land for a century, so that a man who dressed tastefully, spoke elegant English or could tell "God Save the Weasel" from "Pop Goes the Queen" had no chance of political preferment.

Living now grows easier, for more people than ever. There are moments when one need not be striving to keep body and soul together. We begin to look for culture, and find nothing but the lucky old prospector's "Forty dollars worth of ham and eggs."

Dr. Shaw has set out to point us the way to those inner treasure vaults where a man can

really *live*, as a human being. And he does it very well, though, like too many others, he sometimes entangles himself and his reader in too many words. The last half of the book is better than the first: and there are gems of clever thoughts and well-turned phrases scattered throughout.

Physicians are busy men, and far too often think (or, at least, say) that they have no time for culture—though, heaven knows no men in the world need it more! The last chapter in the book ("Paths and Pitfalls of Culture") is for them and others like them. It is a guide to culture in odd moments or on the wing.

All in all, here is a volume worth keeping beside the bed or on the smoking table for a month or two while one browses through it. One will absorb some culture through one's pores in the process.

Blanchard: Letters of Dr. Betterman

THE LETTERS OF DR. BETTERMAN. *By Charles Elton Blanchard, M.D., Author, Betterman II on the Business of Medicine, Our Altruistic Individualism, A text-book of Ambulant Proctology, etc. Youngstown: Medical Success Press.* 1931. *Price* $1.00.

The *Letters of Dr. Betterman* first appeared about twenty years ago, in the form of letters from an old physician to his son, a young doctor. These letters created a deep impression at the time of issue. In these days when so much is being written about medical philosophy, ethics and economics, a persual of these letters ought to give some excellent slants on these matters; they are full of what might be termed the common sense of experience and fruitful professional philosophy.

The book is a most excellent dollar's worth for any doctor, especially for a young one.

Literature on Peptic Ulcer

PEPTIC ULCER; A Symposium of the Current Literature. *By the BiSoDol Company, New Haven, Connecticut,* 1931. *Sent free on request.*

The research department of the BiSoDol Company, in their investigations, collected a large amount of information on peptic ulcer. Abstracts of about 70 important articles which have appeared in medical literature, during recent years especially, are given here, arranged under the general headings of etiology, diagnosis and treatment. This material will give physicians a general view of present-day opinions on a rather common and important disease.

Biddle: Chemistry for Nurses

CHEMISTRY FOR NURSES Including Certain Essential Principles from Inorganic, Organic and Biochemistry; A Combined Text and Laboratory Manual. *By Harry C. Biddle, A.M., Instructor in Chemistry, School of Nursing, Western Reserve University: etc. With 74 Illustrations. Philadelphia: F. A. Davis Company.* 1931. *Price* $2.75.

This lecture and laboratory course textbook is the outgrowth of notes by the author in teaching the fundamentals of chemistry to classes of nurses. The essential facts of organic and inorganic chemistry are arranged in progressive lessons, with here and there applications which the nurse will find of value in her daily work.

All that is required, in the way of chemistry, by the National League of Nursing Education is included in the volume.

A Map of History

HISTOMAP. The World's History in a Graph: *Histomap, Inc., 700 N. Michigan Ave., Chicago, Ill.* 1931. *Price, unmounted,* $1.00; *mounted on linen,* $3.00.

The study of geography without maps would be a rather dry and unprofitable business. The study of history, as mere catalogues of names, dates and events, is equally savorless to most people.

Persons with a scientific training and those who understand the value of time are coming, more and more, to the use of graphs, in order to objectify the subject under study and economize minutes or hours.

Here is a graph of human history for the past 4,000 years, showing the relative importance of peoples or nations, by periods of fifty years, the names of the individuals who influenced the great changes in human thought and activity and the outstanding events which befel from time to time.

This is a valuable time-saver for the busy physician who desires to have the background of knowledge and perspective which is essential to the cultured man.

Goldbacher: Hemorrhoids and Pruritus Ani

HEMORRHOIDS THE INJECTION TREATMENT AND PRURITUS ANI. *By Lawrence Goldbacher, M.D., Philadelphia. Second Revised Edition. Illustrated with 31 Half-Tone and Line Engravings Some in Colors. Philadelphia: F. A. Davis Company.* 1931. *Price* $3.50.

This book describes the author's developed method of treating internal hemorrhoids and pruritus ani by injection of phenolized oil. External hemorrhoids are treated by the surgical excision of thrombi.

Physicians who use the injection method as an office treatment will find the technic here.

Petty: Diabetes

DIABETES; Its Treatment by Insulin and Diet; A Handbook for the Patient. *By Orlando H. Petty A.M., M.D., F.A.C.P., Professor of Diseases of Metabolism, Graduate School of Medicine, University of Pennsylvania; Physician in Charge of Departments of Diseases of Metabolism, Hospitals of the Graduate School of Medicine, University of Pennsylvania, and Philadelphia General Hospital; Consultant in Diseases of Nutrition and Metabolism, Shriners' Hospitals for Crippled Children, Philadelphia Unit. With Illustrations and Tables. Fifth Revised and Enlarged Edition. Philadelphia: F. A. Davis Company.* 1931. *Price* $2.00.

The main object of this small volume is the education of the diabetic patient in all matters

that pertain to his disease and to his general health. The information and instruction given enables him to cooperate intelligently with his physician.

The treatment of diabetes adopted is that by insulin and diet. Two of the 10 chapters are devoted to insulin, including the technic of injection. The other 8 chapters are mostly devoted to dietaries and to the consideration of food values, as well as their applications in controlling diabetes.

The book may be recommended to diabetic patients by their physicians.

Best: Diary of a Physician's Wife

THE DIARY OF A PHYSICIAN'S WIFE. By *Mary Kinsley Best. Rutherford, New Jersey: Medical Economics.* 1931. *Price* $1.00.

The business of being a doctor's wife is a profession to which few young women would give a thought. It requires quite a different set of brains from the average. Mrs. Best seems to have been born for a doctor's wife.

The book is an interesting account of the first few months after the doctor hung out his new sign.

Humor and tragedy are nicely blended with an insight into a doctor's work, living as she did "behind the office," which none of us would glimpse with our doctor-husband in a "swell" office downtown; hours from 10:00 to 12:00 A.M.

It is well worth the time of doctors, doctors' wives and others who are interested in the behind-the-scenes of the medical profession.

M. L. B. L.

Kagan: Hygiene and Health

HYGIENE AND HEALTH. By *Solomon R. Kagan, M.D. Spokane, Washington: Moses N. Janton.* 1931. *Price* $1.00.

Dr. Kagan has written this popular treatise to supply the public need for information on hygiene. It gives this information, as regards the most common ailments and medical emergencies, in plainly-written, easily-understood language; but in a book of this type, intended for laymen, it seems quite unnecessary to cite what other physicians say or recommend regarding different ailments and their treatment.

Physicians may recommend this to patients who desire or need a popular exposition of this kind.

Underwood: Tuberculosis for Nurses

A MANUAL OF TUBERCULOSIS FOR NURSES. By *E. Ashworth Underwood, M.A., B.Sc., M.B., Ch.B., D.P.H. (U. Glas.), Deputy Medical Officer of Health and Tuberculosis Officer, County Borough of Rotherham; etc. With an Introduction by Professor J. R. Currie, M.A., M.D., M.R.C.P., D.P.H., Professor of Public Health in the University of Glasgow. New York: William Wood & Company.* 1931. *Price* $2.50.

The peculiar need of the tuberculosis nurse for knowledge, not up to a medical standard, and yet complete enough for her more limited purpose, has not, the author thinks, been satisfactorily met, and in this book he aims to furnish this information. It should be found informative and stimulating to all engaged in the nursing of tuberculosis patients.

Douthwaite: Asthma

THE TREATMENT OF ASTHMA. By *A. H. Douthwaite, M.D., F.R.C.P. (Lond.), Assistant Physician, Guy's Hospital; Physician in Charge of Massage Department, Guy's Hospital; Hon. Physician, All Saints' Hospital. New York, William Wood & Company.* 1931. *Price* $2.50.

The object of this monograph is to present an epitome of modern medical knowledge on the subject of asthma, particularly from the therapeutic aspect. There is no original work—merely a review.

The author seems singularly unaware or forgetful of the importance of the observations on this subject made by Adam, of Glasgow, and contributions by Haseltine and his coworkers, in America. Without at least, a mention of the ideas of these men, no modern book on asthma can be considered complete.

Hadfield: Practical Anesthetics

PRACTICAL ANESTHETICS: For the Student and General Practitioner. By *Charles F. Hadfield, M.B.E., M.A., M.D., Camb., Sen. Hon. Anaesthetist, Prince of Wales's Hospital: Anaesthetist and Lecturer on Anaesthetics, St. Bartholomew's Hospital; Hon. Sec. Joint Anaesthetics Committee of the Medical Research Council and Royal Society of Medicine. Second Edition. New York: William Wood and Company.* 1931. *Price* $3.50.

This elementary textbook on anesthetics is, as the author states, intended for the medical or dental student or practitioner who, although desirous of becoming an anesthetist capable of dealing satisfactorily with any case that he may meet, does not wish to employ more expensive or complex apparatus than is necessary for his requirements.

The text is confined especially to the common anesthetic agents—chloroform, ether and nitrous oxide oxygen, and gives all the facts, theoretic and practical, that the average practitioner should know.

Surgical Clinics of North America

SURGICAL CLINICS OF NORTH AMERICA. *Lahey Clinic Number. Volume 11, Number 2, April, 1931. Philadelphia and London: W. B. Saunders Company. Issued serially, one number every other month. Per Clinic year, February, 1931. to December, 1931: Paper, $12.00; Cloth, $16.00.*

The April 1931 number of the *Surgical Clinics of North America* is devoted to contributions from the Lahey Clinic, Boston. There are 30 papers, by 15 contributors.

Dr. F. H. Lahey opens with a discussion of anesthesia and the anesthetist, especially as concerns the Lahey Clinic. He also contributes some practical papers on thyroid surgery. Drs. H. M. Clute, R. B. Cattell and L. M. Hurxthall also write good short papers on surgical conditions of the thyroid. Dr. Jas. B. Hicks furnishes some useful experiences on "Complicated Ure-

teral Calculi"; Dr. Shields Warren one on "Ascites with Ovarian Tumors" and Dr. Sara M. Jordan a useful "Classification of Diseases Called Colitis." There are a number of other valuable clinical papers.

Lloyd: Felix Moses

FELIX MOSES: The Beloved Jew of Stringtown on the Pike. Pages from the Life Experiences of a Unique Character—A Man Whose Romantic Record Challenges Imagination. *By John Uri Lloyd, Author of mystical Etidorhpa, Stringtown on the Pike, Warwick of the Knobs, Red Head and other Folk Lore Studies of Northernmost Kentucky. Illustrated by Augustus Knapp. Cincinnati: The Caxton Press.* 1930. *Price* $4.50.

The story of a Jewish immigrant in the Kentucky mountains during the Civil War period, full of mountain dialect and folklore of that day; makes very interesting reading for the student of character study.

In alternate chapters the author, true to his lifetime hobby, delves in the metaphysical, so that the student of metaphysics can also be satisfied. This combination from the pen of the author of "Etidorhpa" and "Stringtown on the Pike," although it will not rank among the "best sellers" (its excellent makeup alone prohibits this), will nevertheless prove interesting reading today, as well as in the future. It is the kind of book one likes to pick up at random, to take one away from the hustle and speed of this twentieth century for a little reflection and meditative thought on the past as well as the future.

C. F. L.

Todd & Sanford: Clinical Diagnosis

CLINICAL DIAGNOSIS BY LABORATORY METHODS; A Working Manual of Clinical Pathology. *By James Campbell Todd, Ph. B., M.D., Late Professor of Clinical Pathology, University of Colorado School of Medicine, and Arthur Hawley Sanford, A.M., M.D., Professor of Clinical Pathology, University of Minnesota (The Mayo Foundation); Head of Section on Clinical Laboratories, Mayo Clinic. Seventh Edition, Thoroughly Revised with 347 Illustrations, 29 in Colors. Philadelphia and London: W. B. Saunders Company.* 1931. *Price* $6.00.

Todd's *Clinical Diagnosis* is well known as a good, practical book to those physicians who round out their clinical examinations by laboratory tests of the body fluids, excreta, etc. It contains descriptions of all the microscopic and chemical tests which come within the scope of practising physicians.

Since the death of Professor Todd, his collaborator, Dr. A. H. Sanford, has taken up the work of revision and this seventh edition includes a number of new tests, such as Clark & Collip's method of calcium determination, the Aschheim-Zondek pregnancy test, etc. The book has been thoroughly revised to date and should meet the needs of practitioners and students.

Lewis: Clinical Electrocardiography

CLINICAL ELECTROCARDIOGRAPHY. *By Sir Thomas Lewis, M.D., F.R.S., D.Sc., LL.D., F.R.C.P., C.B.E., Physician of the Staff of the Medical Research Council; Physician in Charge of Department of Clinical Research University College Hospital; Honorary Consulting Physician to the Ministry of Pensions; Consulting Physician, City of London Hospital; Fellow of University College, London. 5th Edition. London: Shaw & Sons, Ltd., 7 & 8, Fetter Lane, E.C.4.* 1931. *Price* 8s.6d.

The author has published a number of works dealing with the investigation of the action of the heart muscle, in normal and abnormal conditions, especially by means of electrocardiography.

The present monograph (which has reached its fifth edition) is intended as a supplement to the author's *Clinical Disorders of the Heart Beat*. It will serve as an introduction to the subject, for students of electrocardiography, and as a guide to practitioners in understanding curves that may be taken by others from patients in their charge.

The variations of the electrocardiogram in the commoner abnormalities of the heart muscle are profusely shown and well described in the text.

Sahli: Clinical Diagnosis

LEHRBUCH DER KLINISCHEN UNTERSUCHUNGSMETHODEN FÜR STUDIERENDE UND PRAKTISCHE ARZTE. *Von Prof. Dr. H. Sahli, Em. Direktor der medizinischen Universitätsklinik in Bern. Siebente, umgearbeitete und ergänste Auflage. II Band. Mit 142 Textabbildungen und 8 lithographierten Tafeln. Leipzig und Wien: Franz Deuticke.* 1931. *Price M* 30.— S45.—.

Professor Sahli's textbook of clinical diagnostic methods is well known. This is the second volume of the Seventh German edition. It deals with diagnostic procedures associated with the urine, sputum and blood.

Physicians who read German will find this work very complete in all details of laboratory and clinical diagnostic methods.

Brugsch: Internal Medicine

LEHRBUCH DER INNEREN MEDIZIN; In Zwei Bänden. *Von Professor Dr. Theodor Brugsch, o.ö. Professor der Medizin an der vereinigten Friedrichs-Universität Halle-Wittenberg und Direktor der med. Universitätsklinik Halle (Salle). Zweiter Band. Mit 288 Abbildungen im Text und 16 farbigen Tafeln. Berlin: Urban & Schwarzenberg.* 1931. *Price geh RM*30.— *geb. RM* 33.—.

The second and final volume of Professor Brugsch's original textbook of internal medicine deals with diseases of the circulatory, respiratory and digestive system and also with some general conditions. The work is apparently very thorough and should be of great value to physicians seeking an up-to-date treatise and who prefer a German exposition. There is a good index.

MEDICAL · NEWS

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Mechanical Mind Reader

An unusual device (a nerve reaction machine) is being used effectively by the medical department of the Chicago Rapid Transit Company, in tests for the purpose of increasing the safety of operation on the "L" lines. This machine records the nerve reaction, alertness of mind, accuracy of motion, precision of movement, extent of carefulness and degree of muscular fatigue of persons taking the test. On the basis of these tests, preventive methods of treatment have been adopted to eliminate the factors causing unsafe practices in the past.

No Coffey-Humber Clinic in New York

Drs. Coffey and Humber, the widely publicized patentees of an adrenal cortex extract for the "cure" of cancer, have sought, through their Better Health Foundation, to establish a clinic for the manufacture and use of their product in the magnificent estate at Huntington, Long Island, donated to them by Mrs. Grace Connors. This plan was strongly opposed by the medical and cancer societies of New York and, on May 19, 1931, permission to establish the clinic was refused, by unanimous vote of the State Board of Social Welfare, on the ground that there are, already, ample facilities for the experimental and clinical testing of this remedy, by competent scientists and physicians, and that it is contrary to established policy to permit the establishment of clinics for the use and possible exploitation of any one remedy or method, particularly a patented product. The fight of the Californians for an eastern foothold may be continued.

Courtesy, *Med. Pocket Quarterly*

Getting Back at the Drug Stores

If the drug stores can—and ostentatiously *do*—feed the transient hungry, why should not the restauranteur purvey drugs for the relief of his ailing patrons?

At least one restaurant owner, in Pasadena, Calif., has undertaken to "get hunks" with the druggists by installing a case of medicines and drug sundries in his food emporium.

If there are others, we should be glad to hear of them, with pictures.

The Cost of Medical Education

The cost of medical education to the student, for 1929-1930, shown by the reports of 1,161 students attending widely separated and various types of medical schools, averages slightly more than $1,100. Tuition, fees and board and room call for

59 percent of the average total expense. Costs seem to be highest in the schools of the New England and Middle Atlantic states and most reasonable in the schools of the Pacific and Mountain states, with the South Atlantic states following closely.—DR. R. G. LELAND, Asst. Director, Bureau of Health and Public Instruction, A. M. A., in *J.A.M.A.*, Feb. 28, 1931.

Courtesy, *Bul. Chicago Dent. Soc.*

New Home of the American Dental Association

The American Dental Association has recently moved into a new home which it has purchased (shown above), located at 212 E. Superior St., Chicago, one block from McKinlock Campus of Northwestern University.

Sea-Going Clinic

The "Empress of Britain," new flagship of the Canadian Pacific Line, is equipped with a complete medical clinic—operating room, delivery room, dental operating room, isolation hospital, laboratory, x-ray and ultraviolet ray outfits and hydrotherapy department—to take care of the needs of her 1,500 passengers and crew. There is even a drugstore, florist's shop, and a telephone at every patient's bedside, by means of which he can talk to any station in the world. Radio connections are a matter of course.

Some forward step from the days of the old windjammers!

Prevalence of Venereal Disease

Chicago's Health, for Jan. 20, 1931, estimates the prevalence of venereal disease like this:

"Based on surveys, it is fairly estimated that there were approximately 643,000 cases of syphilis and 474,000 cases of gonorrhea constantly under care or observation in the United States. However, all cases are not under care or observation. As a result of other surveys it was found that the actual number of cases of syphilis exceeded the number under treatment by approximately 49 percent, and the acutal number of cases of gonorrhea exceeded the number under treatment by 300 percent. It was then determined by estimation that, altogether, known and unknown cases of syphilis averaged 958,000 annually, and those of gonorrhea averaged 1,420,000 annually."

"These estimates are far below those used during and immediately after the war, when some of the most reliable of the proponents of sex education shouted from the housetops that more than ten million of our population were suffering from syphilis."

Send · For · This · Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physician's supplies, foods, etc., CLINICAL MEDICINE and SURGERY, North Chicago, Ill., will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

When requesting literature, please specify whether you are a doctor of medicine, dentistry, medical student, a registered pharmacist, or a nurse.

P- 3 Storm Binder and Abdominal Supporter. 4-page folder by Dr. Katherine L. Storm.

P- 47 Campho-Phenique in Major and Minor Surgery. Campho-Phenique Company.

P- 95 Everything for the Sick.| Lindsay Laboratories.

P-116 Hemo-Glycogen, The New Product Hemoglobin Compound and Liver Extract. Chappel Bros., Inc.

P-120 Building Resistance — Guiatonic. William R. Warner & Co., Ltd.

P-196 "Facts Worth Knowing." Intravenous Products Co. of America, Inc.

P-258 Prophylaxis. August E. Drucker Co.

P-269 Special Course No. VI Traumatic Surgery. Illinois Post Graduate Medical School, Inc.

P-271 The Intestinal Flora. The Battle Creek Food Company.

P-292 Acidosis and Infection—Alka-Zane. William R. Warner & Co., Inc.

P-310 Conclusions from published research of the value of Ceanothyn as a hemostatic. Flint, Eaton & Co.

P-318 Blood Clinical and Laboratory Diagnosis. A book of 160 pages by Henry Irving Berger, M.D. Battle & Company.

P-347 Graphic Chart of the Treatment of Circulatory Disturbances. Merck & Company.

P-354 Getting the Most Out of Life. Stanco, Inc.

P-374 Table for Determining Date of Delivery. The Viburno Company, Inc.

P-383 Syrup Histosan Controls the Cough in Acute and Chronic Bronchitis, Pneumonia and other Pulmonary Diseases. Ernst Bischoff Co., Inc.

P-391 Imhotep. Egyptian Medicine Was a quaint Mixture of Rationalism and Magic — Agarol. William R. Warner & Co., Inc.

P-392 Arthritis. Its Classification and Treatment. Battle & Co.

P-401 When the Cross Roads are Reached in Hemorrhoids (Piles). Schering & Glatz, Inc.

P-402 The First Question—Agarol. Wm. R. Warner & Co., Inc.

P-404 Urotropin, the Intravenous Administration of the Original Farmaldehyde-Liberating Urinary and Systemic Antiseptic. Schering & Glatz.

P-410 Acidosis. A Warning Sign in Pregnancy—Alka-Zane. Wm. R. Warner & Co., Inc.

P-414 Laboratory Test in Pictures—Silvogan. Ernst Bischoff Company, Inc.

P-425 Cerebrospinal Fever (Epidemic, Cerebrospinal Meningitis, Meningococcic Meningitis, Spotted Fever), Symptoms and Specific Treatment with Anti-Meningococcic Serum. The National Drug Co.

P-443 AbilenA. Its Location, Discovery, Origin, Chemistry, Medicinal or Clinical Value and Uses. The AbilenA Co.

P-449 General Catalog of Medicinal Chemicals. Bilhuber-Knoll Corp.

P-455 AbilenA. The Ideal Cathartic Water. The AbilenA Co.

P-456 Science Applied to Tobacco. Health Cigar Company, Inc.

P-465 Diagnosis of Cardio-Vascular Diseases, by Henry Irving Berger, M.D. Sultan Drug Company.

P-478 Diatussin in the Treatment of Whooping Cough and Other Spasmodic Coughs. Ernst Bischoff Co., Inc.

P-480 The Incidence of Eczema in Skin Diseases in about 20 percent. Bilhuber-Knoll Corp.

P-481 The Breath of Life — Alpha-Lobelin. Ernst Bischoff Company Inc.

P-491 Announcing a New and Better Sedative—Sedormid. Hoffmann-La-Roche, Inc.

P-504 Bedtime Nourishment. Mellin's Food Co.

P-507 The Secret of Our Digestive Glands, J. W. Wuppermann Angostura Bitters Agency, Inc.

P-523 Urinary Tests and Color Charts for Practical Use in Office Diagnosis. Od Chemical Co.

P-524 Balance, the Importance of the Acid-Base Equilibrium of the Body. The BiSoDol Company.

P-525 The Treatment of Hemorrhage with Therapeutic Notes on the Use of Ceanothyn. Flint, Eaton & Company.

P-527 Elixir Angostura Amarum Sigert. Angostura Bitters in the Daily Practice. J. W. Wuppermann Angostura Bitters Agency, Inc.

P-528 Iodine Prescription Specialties (Physiologically Available FREE Iodine), Oral, Intravenous, Intramuscular, Alveolar Inhalation and Local. Burnham Soluble Iodine Co.

P-533 Intra-Nasal Care of Hay Fever Cases. Dr. Edmondson's Infirmary.

P-535 Vera-Perles of Sandalwood Compound. The Paul Plessner Company.

P-538 Endocrine Essentials—Gonad Organotherapy, No. 3 of a series. The Harrower Laboratory, Inc.

P-539 Burdick Light Therapy Equipment. The Burdick Corporation.

P-540 Infra-Red Therapy with Burdick Zoalites. The Burdick Corporation.

P-542 Colloidal Mercury Sulphide-Hille Effective in Wassermann-Fastness. Hille Laboratories, Inc.

P-543 The Circulation of Bile. The Plessner Company.

P-544 "Neverslip"—Definite Aids in Reducing Infant and Maternal Mortality. "NSS" Laboratory.

P-545 The Etiology and Treatment of Hay Fever—Hay Fever Antigens. The National Drug Company.

P-546 Colloidal Mercury Sulphide-Hille. A Preliminary Report of Clinical Findings by Leo C. DuBois, M.D. Hille Laboratories, Inc.

P-547 —this is where You enter the picture—Detoxol. The Wm. S. Merrell Company.

P-548 The Hormone, June, 1931. The Harrower Laboratory, Inc.

P-549 Progene, An Aid to Conception in Sterility Caused by Adverse Vaginal Conditions. Holland-Rantos Co., Inc.